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ABSTRACT

This revised edition of a guide to vocational program planning in Virginia is intended to be used as a principal resource for vocational program design and application and to serve as a supplement to program information provided to localities by the individual service areas. The guide is organized in eight sections, one for each program area: agricultural education, business education, health occupations education, marketing education, programs for special needs students, technology education, trade and industrial education, and work and family studies. Each section contains the following information: (1) service area overview; (2) student organization information; (3) information on substitutions for high school science, mathematics, and practical arts credits; (4) a graphic representation of suggested program sequences by grade level; (5) a table showing programs and courses along with course codes, grade levels, class sizes, and duration in number of weeks; (6) individual program and course descriptions, including Classification of Instructional Programs (CIP) Code, suggested grade level, prerequisites, approved courses, and related postsecondary programs; and (7) completer requirements for vocational programs. (KC)

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GUIDE TO VOCATIONAL PROGRAM PLANNING

Developed by

Virginia Department of Education
Division of Instruction
Office of Vocational, Adult, and
Employment Training Services
Richmond, Virginia 23216-2120

In cooperation with

The Virginia Vocational Curriculum and Resource Center
Glen Allen, Virginia 23060

Revised 1994

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Preface

This edition of *A Guide to Vocational Program Planning* has been revised to reflect information essential for use in 1995-96. It is intended to be a principal resource for information concerning vocational program design and application and serves as a supplement to program information provided to localities by the individual program service areas.

The *Guide* is divided into eight sections, one for each program service area. Each section contains the following information:

- A service area overview
- Student organization information
- Information on substitutions for high school science, mathematics, and practical arts credits[1]
- A graphic representation of suggested program sequences by grade level
- A table showing programs and courses along with course codes, grade levels, class sizes, and duration in number of weeks
- Individual program and course descriptions, including Classification of Instructional Programs (CIP) Code, suggested grade level, prerequisites, approved courses, and related postsecondary programs.
- Completer requirements for vocational programs.[2]

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[1]It should be noted that the completed vocational offerings that may substitute for a mathematics or science credit are valid only for a 21-unit diploma. **No substitution for vocational program completion is allowed when a 23-unit diploma is required.** The decision to allow any substitution is a local option.

[2]*A program completer* is a student who completes a program that includes a coherent sequence of courses: vocational courses identified by the Vocational Education Reporting System Users Guide and academic courses as identified by the Standards and Regulations for Public Schools in Virginia or an approved alternative education program.

Additional standards are available for students desiring a stronger academic and vocational program, along with information on developing occupational programs that combine two or more courses from different programs.[3]

Requests for additional information or clarification should be addressed to the appropriate program service area at the following address:

Virginia Department of Education
P. O. Box 2120
Richmond, Virginia 23216-2120.

[3] *Vocational program mix* refers to career preparation involving two or more vocational programs and related academic instruction.

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Agricultural Education in Virginia

Overview

Agricultural Education is much broader than vocational agriculture. Agriculture encompasses the study of economics, technology, politics, sociology, international relations and trade, and environmental problems, in addition to biology.

Some instruction about agriculture should be offered to all students, regardless of their career goals or whether they live in urban, suburban, or rural communities. New courses developed for sixth, seventh, and eighth graders, along with the other courses offered, will help to make our society more agriculturally literate.

The agricultural education curriculum is predicated on the belief that certain abilities and skills necessary for successful employment in agricultural occupations can best be developed through systematic and extended instruction; therefore, instruction is based on a five-year sequential program. The first two years are devoted to basic agricultural science and mechanics. These courses provide knowledge and skills basic to employment in agricultural business and lead into one of the five specialized occupational areas in agricultural education offered at the senior high school level.

The agricultural education curriculum stresses the development of leadership abilities and work values and attitudes in units of instruction contained in each course. In addition to the personal employability skills and job search skills that are developed in all occupational preparation programs, the student organization (FFA) provides members with opportunities to use and refine their abilities in leadership and in work situations. FFA activities are an integral part of the total instructional program in agricultural education.

Each student enrolled in an agricultural education course (other than Introduction to Agriscience) should have well planned, supervised agricultural experiences. These include work at school facilities, in agricultural businesses, in home enterprises, or through a combination of these opportunities.

Mission of Agricultural Education in Virginia

The needs of all students in agricultural education in kindergarten through adult will be met by providing a quality instructional program. Instruction in agricultural education will focus on

- the awareness and appreciation of agriculture
- the preparation of students to enter and advance in agricultural occupations
- the application of basic skills to strengthen and support other courses taught in public schools.

Goals

Students enrolled in Agricultural Education in Virginia will

- ❖ become aware of employment or self-employment opportunities and requirements for making career choices and determining their education programs.
- ❖ acquire the competencies needed for employment or self-employment in occupations of their choice and for which there are employment opportunities.
- ❖ acquire the competencies needed as consumers of resources, goods, and services for home and family living and for personal needs.
- ❖ develop the competencies needed for a successful transition from school to work with emphasis on the following:
  - leadership skills
  - the American free enterprise system
  - responsible citizenship
  - personal employability skills.
- ❖ benefit from programs developed through collaborative efforts with business, industry, and government that effectively use public and private resources.
- ❖ become aware of the importance of agriculture in today's society.

Student Organization: FFA

The FFA is a national organization of students enrolled in agricultural education in 50 states, Puerto Rico, the Virgin Islands, and the District of Columbia. Organized in 1928, the FFA is an integral part of the curriculum in agricultural education departments in the public schools. All students in these programs are to receive instruction in personal leadership growth and development, which can best be achieved through the FFA.

Through active participation in the FFA, members learn by taking part in and conducting meetings, speaking in public, participating in contests based on occupational skills, earning awards and recognition, and becoming involved in cooperative efforts and community improvement. The FFA offers opportunities for becoming productive citizens in a democracy.

FFA members believe in leadership, citizenship, and patriotism. They believe in free enterprise and freedom under the law in making their homes, schools, and communities better places in which to live and work.

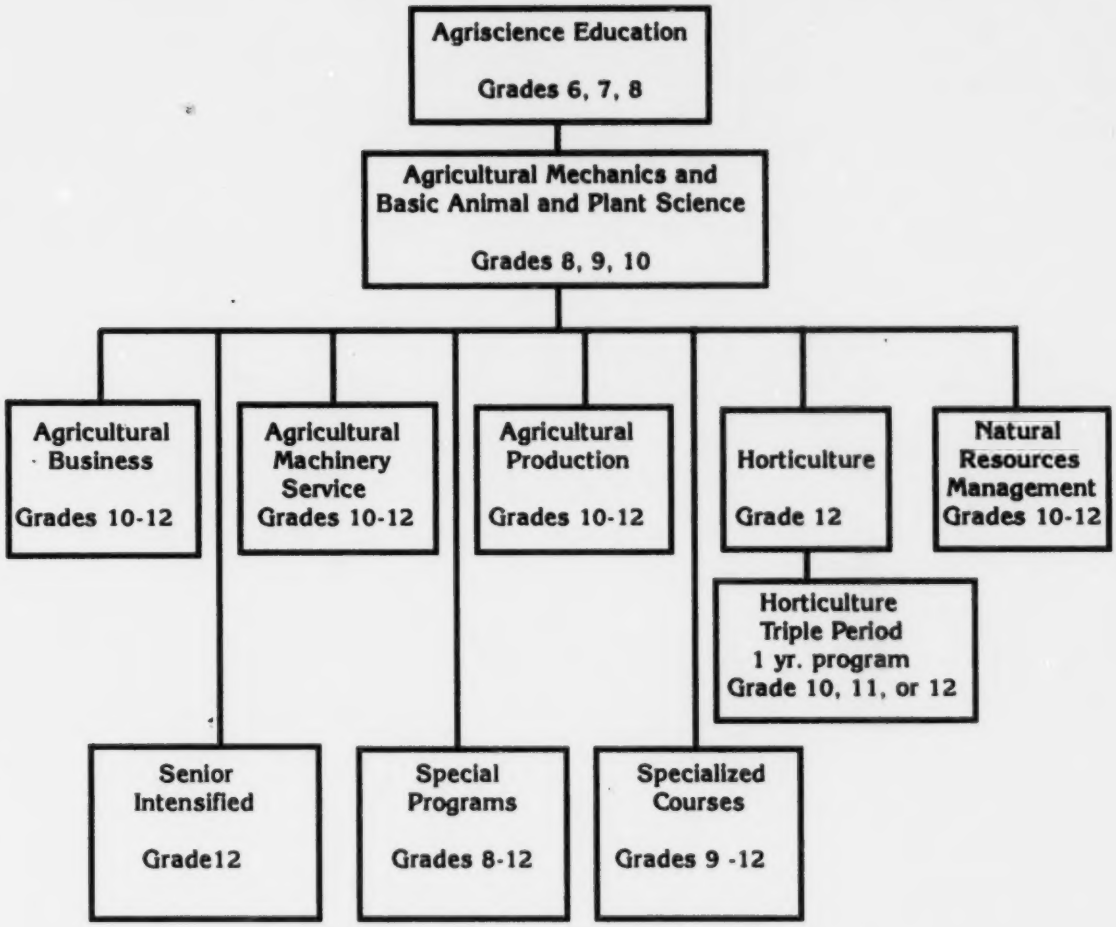
Substitution for High School Science, Mathematics, and Practical Arts Credit

Students who fulfill the requirements of any one of the following may substitute them for one unit of high school mathematics or science in a 21-unit diploma system, if approved as a local option:

- Completion of two courses with at least 2 credits earned (not including exploratory).
- Completion of a vocational center program offered as a single year of triple-period classes.
- Completion of a senior intensified course scheduled for a double period or more than one year.

Agricultural Education courses meet requirements for a practical arts elective.

Agricultural Education
Recommended Program Sequence



Agricultural Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Agriscience Education				
Introduction to Agriscience	8002	6	18 or less	
Agriscience Exploration	8003	7	18	
Agriscience and Technology	8004	8	18/36	
Agricultural Business*				
Agricultural Mechanics and Basic Plant Science (I)	8006	8-9	36	20
Agricultural Mechanics and Basic Animal Science (II)	8008	9-10	36	20
Agricultural Business Fundamentals (III)	8022	10	36	20
Agricultural Business Operations (IV)	8024	11	36	20
Agricultural Business Management (V)	8026	12	36	20
Agricultural Machinery Service*				
Agricultural Mechanics and Basic Plant Science (I)	8006	8-9	36	20
Agricultural Mechanics and Basic Animal Science (II)	8008	9-10	36	20
Agricultural Power and Equipment (III)	8016	10	36	20
Agricultural Mechanization Sales and Service (IV)	8018	11	36	20
Advanced Agricultural Mechanization (V)	8020	12	36	20
Agricultural Production*				
Agricultural Mechanics and Basic Plant Science (I)	8006	8-9	36	20
Agricultural Mechanics and Basic Animal Science (II)	8008	9-10	36	20
Agricultural Production Technology (III)	8010	10	36	20
Agricultural Production Management (IV)	8012	11	36	20
Operating the Farm Business (V)	8014	12	36	20
Natural Resources Management*				
Agricultural Mechanics and Basic Plant Science (I)	8006	8-9	36	20
Agricultural Mechanics and Basic Animal Science (II)	8008	9-10	36	20
Introduction to Natural Resources (III)	8040	10	36	20
Forestry, Wildlife, and Soil Management (IV)	8042	11	36	20
Natural Resources Business Management (V)	8044	12	36	20
Horticulture (Regular program)*				
Agricultural Mechanics and Basic Plant Science (I)	8006	8-9	36	20
Agricultural Mechanics and Basic Animal Science (II)	8008	9-10	36	20
Horticulture Sciences and Practices (III)	8034	10	36	20
Horticulture Operations (IV)	8036	11	36	20
Horticulture Management (V)	8038	12	36	20

*Approved program

Notes:

1. **Agricultural Mechanics and Basic Plant Science (I) and Agricultural Mechanics and Basic Animal Science (II) are fundamental courses for all Agricultural Education programs.**
2. Numerals I-V indicate the course level in a particular program.
3. It is recommended, but not required, that all courses listed for a particular program be taken in sequence.
4. The cooperative education method of instruction may be implemented in all agricultural programs.

Agricultural Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Horticulture (Triple-period one-year programs)*				
Agricultural Mechanics and Basic Plant Science (I)	8006	8-9	36	20
Agricultural Mechanics and Basic Animal Science (II)	8008	9-10	36	20
Floral Production and Design (III)	8038	10-11	36	20
Horticulture Production and Marketing (III)	8038	10-12	36	20
Nursery and Landscape Management (III)	8038	10-12	36	20
Courses for Special Programs Students				
Agricultural Education for the Disadvantaged	8050	8-12	36	10
Agricultural Education for the Disabled	8053	8-12	36	10
General Mechanics for the Disadvantaged	8070	8-12	36	10
Senior Intensified Courses				
Turf Management	8051	12	36	20
Farm Equipment Operator	8052	12	36	20
Specialized Courses				
Applied Agricultural Concepts	8072/8073	9-12	18,36	20
Ecology/Conservation	8045/8046	9-12	18,36	20
Equine Management and Production	8015/8080	9-12	18,36	20
Leadership Development	8009/8081	9-12	18,36	20
Small Engine Repair	8021/8082	9-12	18,36	20

*Approved program

Notes:

1. **Agricultural Mechanics and Basic Plant Science (I) and Agricultural Mechanics and Basic Animal Science (II) are fundamental courses for all Agricultural Education programs.**
2. Numerals I-V indicate the course level in a particular program.
3. It is recommended, but not required, that all courses listed for a particular program be taken in sequence.
4. The cooperative education method of instruction may be implemented in all agricultural programs.

Agriscience Education

Description: This program introduces agriscience to all middle school students as they become aware of, explore, and apply science to agriculture. Students develop an understanding of the nature of science and how it is applied in the food and fiber system.

CIP Code: 01.999

Suggested Grade Level: 6, 7, 8

Approved Courses:
Introduction to Agriscience 8002
Agriscience Exploration 8003
Agriscience and Technology 8004

Introduction to Agriscience 8002

Grade Level: 6 (18 weeks or less)

Middle school students develop an awareness of the relationships between agriculture and science. Major concepts covered in the course include awareness of agriculture, the world of work, agribusiness careers, human relations, and scientific principles applied in agriculture.

Agriscience Exploration 8003

Grade Level: 7 (18 weeks)

Students explore science as it relates to agriculture. Through well planned instructional activities, students develop an understanding of human relations, communication, the importance of agriculture to the economy, and key scientific terms related to the field of agriculture.

Agriscience and Technology 8004

Grade Level: 8 (18 or 36 weeks)

Through laboratory settings, students apply scientific principles to the field of agriculture, including plants, animals, and ecology/conservation. The course introduces students to biotechnology as it relates to agriculture.

Agricultural Mechanics and Basic Plant Science (I) Agricultural Mechanics and Basic Animal Science (II)

Fundamental Courses Relative to All Agricultural Education Programs

Description:

Agricultural Mechanics and Basic Plant Science (Level I) and Agricultural Mechanics and Basic Animal Science (Level II) are introductory and basic in nature and provide a background for success in agricultural occupations. Students develop basic skills and receive guidance and counseling to help them select an advanced course option leading to entry-level employment in an agricultural occupation. Students review, study, and apply basic principles of the sciences and economics to agricultural situations. This two-year program of study provides much of the knowledge and many of the skills common to agricultural production and employment in off-farm agricultural industries and businesses.

The program covers the first two years in the agricultural education curriculum and is normally a prerequisite for entry into agricultural courses taught in the third, fourth, and fifth years. Schools that offer the third-, fourth-, and fifth-year programs without the first two years of agricultural mechanics and basic plant and animal science must include the essential units of instruction from these basic courses within the course content of the specialized areas.

CIP Codes:

01.0301 01.0201 03.0101
01.0101 01.0601

Suggested Grade Level:

8, 9, 10

Approved Courses:

Agricultural Mechanics and Basic Plant Science (Level I) 8006
Agricultural Mechanics and Basic Animal Science (Level II) 8008

Agricultural Mechanics and Basic Plant Science (Level I) 8006

Grade Level: 8 or 9 (suggested) (36 weeks)

Approximately one-half of this single-period occupational preparation course is devoted to agricultural mechanics, with emphasis placed on skill development in basic metals, tool fitting and cold metals, introduction to arc welding, sheet metal, soldering and brazing, plan reading and sketching, and hand woodworking. The remainder of the course emphasizes the development of competencies in plant sciences, rural and urban living, leadership, and resource conservation.

Agricultural Mechanics and Basic Animal Science (Level II) 8008

Grade Levels: 9 or 10 (suggested) (36 weeks)

During the first half of this single-period occupational preparation course, students continue to learn agricultural mechanics, with emphasis placed on fundamentals of electricity, arc welding, gas cutting and welding, small engines, power woodworking, and wood and metal preservatives. They also receive instruction in animal science and further develop competencies in rural and urban living, leadership, and resource conservation.

Agricultural Business

Description:

The Agricultural Business program provides the basic education necessary for entry-level employment and advancement in the broad field of agricultural business. Most secondary agricultural business programs are cooperative education programs; students are involved in classroom activities for one period and are released to work in an agricultural business for one to three periods each day. Classroom topics include human relations, types of agricultural businesses, leadership training, agricultural business management, record keeping, accounting, and agricultural law. A training plan, developed for the student's cooperative work experience and approved by the employer, parent, student, and instructor, lists the competencies (skills) that the student will practice. An evaluation instrument used by the student, employer, and instructor monitors the student's progress toward completing the training plan. Skills developed in the secondary agricultural business programs in Virginia vary greatly and depend upon the student's interests and community resources. Students work for agricultural businesses in all areas of the agricultural industry.

CIP Codes:

01.0101 01.0103 01.0501
01.0102 01.0104 01.0199

Suggested Grade Level:

8, 9, 10, 11, 12

Approved Courses:

Agricultural Mechanics and Basic Plant Science (I) 8006
Agricultural Mechanics and Basic Animal Science (II) 8008
Agricultural Business Fundamentals (III) 8022
Agricultural Business Operations (IV) 8024
Agricultural Business Management (V) 8026

Related Postsecondary Programs:

The Agricultural Business program is articulated with the Agricultural and Natural Resources Technology program offered within the Virginia Community College System, which leads to an Associate in Applied Science Degree. Each degree program includes several majors, some of which are further divided into appropriate specializations.

Agricultural Business Fundamentals (III) 8022

Grade Level: 10 or 11 (suggested) (36 weeks)

Students enrolled in this occupational preparation course develop the necessary knowledge, skills, habits, and attitudes for employment in off-farm agricultural businesses. These businesses provide supplies and services to farmers and process and market agricultural products. Where training centers are available, cooperative arrangements with local agricultural businesses provide occupational experiences for students. When training centers are not available, simulated experiences may be provided. Students acquire an understanding of agricultural business opportunities and the importance of an off-farm agricultural business. They develop product knowledge of items such as feed, seed, fertilizer, machinery, and agricultural chemicals. Leadership training is provided through the FFA.

Agricultural Business Operations (IV) 8024

Grade Level: 11 or 12 (suggested) (36 weeks)

Wherever possible, students enrolled in this occupational preparation course participate in cooperative on-the-job training programs with local agricultural businesses. The curriculum emphasizes off-farm agricultural occupations, business procedures, merchandising, marketing, and agricultural business management. Instruction is provided in agricultural product knowledge, agricultural mechanics, plant science, and leadership development.

Agricultural Business Management (V) 8026

Grade Level: 12 (suggested) (36 weeks)

This occupational preparation course should be operated on a cooperative on-the-job training basis with local agricultural businesses. Much of the instruction may be individualized. The course provides further opportunities for the development of business procedures, management techniques, and agricultural product knowledge. Leadership skills continue to be developed.

Agricultural Machinery Service

Description: The Agricultural Machinery Service program involves the operation, maintenance, setup, adjustment, repair, reconditioning, and overhaul of agricultural machinery and equipment. Curriculum includes dealership organization, management, sales, human relations, and leadership development. The study of career opportunities and the development of job experience through supervised occupational experiences are also a part of this program.

CIP Codes: 01.0204 01.0202
01.0201 01.0299

Suggested Grade Level: 8, 9, 10, 11, 12

Approved Courses:
Agricultural Mechanics and Basic Plant Science (I) 8006
Agricultural Mechanics and Basic Animal Science (II) 8008
Agricultural Power and Equipment (III) 8016
Agricultural Mechanization Sales and Service (IV) 8018
Advanced Agricultural Mechanization (V) 8020

Related Postsecondary Programs: Agricultural Machinery Service is not an articulated program; however, both the Virginia Community College System and several four-year colleges in Virginia offer postsecondary degrees in agriculture and related fields. Refer to their catalogs for specific information.

Agricultural Power and Equipment (III) 8016

Grade Level: 10 or 11 (suggested) (36 weeks)

Agricultural Power and Equipment prepares students for entry-level employment and advancement in the agricultural equipment industry or for the operation and maintenance of farm equipment. Students learn to use selected hand tools, precision measuring tools, and testing equipment. The course also includes instruction in safety, human relations, small engines, farm tractor maintenance, and introduction to tractor engine analysis.

Agricultural Mechanization Sales and Service (IV) 8018

Grade Level: 11 or 12 (suggested) (36 weeks)

Students enrolled in this course learn operating procedures in a parts department, newly developed agricultural machines, engine analysis and troubleshooting, basic hydraulics, mechanical power transfer systems, the implement industry, metal fusion and fabrication welding, and adjustment and repair of tillage equipment.

Advanced Agricultural Mechanization (V) 8020

Grade Level: 12 (suggested) (36 weeks)

Much of the instruction in Advanced Agricultural Mechanization may be offered through individualized instruction and independent study. Major learning areas include operation of an agricultural machinery service department; adjustment, maintenance, and repair of planting, spraying, fertilizing, and crop harvesting equipment; diesel engine systems; organization and management of agricultural machinery dealerships; and agricultural sales techniques.

Agricultural Production

Description: Students who complete the sequence in Agricultural Production are proficient in animal, plant, and soil sciences and in farm business management and agricultural mechanics. The program provides leadership training through the FFA and incorporates supervised occupational experiences whenever possible.

CIP Codes: 01.0301 01.0303 01.0305
01.0302 01.0304 01.0399

Suggested Grade Level: 8, 9, 10, 11, 12

Approved Courses:
Agricultural Mechanics and Basic Plant Science (I) 8006
Agricultural Mechanics and Basic Animal Science (II) 8008
Agricultural Production Technology (III) 8010
Agricultural Production Management (IV) 8012
Operating the Farm Business (V) 8014

Related Postsecondary Programs: Agricultural Production is not an articulated program; however, both the Virginia Community College System and several four-year colleges in Virginia offer postsecondary degrees in agriculture and related fields. Refer to their catalogs for specific information.

Agricultural Production Technology (III) 8010

Agricultural Production Technology emphasizes the attainment of competencies in one or more areas of plant science, animal science, soil science, agricultural business management, and agricultural mechanization, based upon the student's employment objective. The course includes appropriate instruction in agricultural mechanics, crop production, farm family living, and basic farm management. Supervised occupational experience programs and leadership training are important parts of the course. When only single periods are provided, greater emphasis is placed on individualized instruction and supervised occupational experience programs.

Agricultural Production Management (IV) 8012

Grade Level: 11 or 12 (suggested) (36 weeks)

Agricultural Production Management includes instruction in agricultural mechanics, with emphasis placed on the application of mechanical skills to farm power and machinery, soil and water management, supervised farming programs, and leadership training.

Operating the Farm Business (V) 8014

Grade Level: 12 (suggested) (36 weeks)

Much of the content in this occupational preparation course may be provided through individualized instruction. The course focuses on farming, farm management, and occupational experience. Students receive instruction in adjusting, operating, and maintaining farm machinery and equipment and in planning and constructing farm buildings and facilities. Continued emphasis is placed on leadership training.

Natural Resources Management

Description:

The Natural Resources Management program focuses on the production, maintenance, harvesting, processing, and distribution of natural resources. The course includes resources management, conservation, human relations, and leadership development topics. The study of career opportunities and the development of marketable skills through supervised occupational experiences are also a part of this program.

The primary purposes of the course of study are to

- provide job entry and/or marketable skills training in natural resources management and related occupations
- provide a broad base of occupational experiences and information upon which students can make a career decision
- contribute to the fulfillment of the broad educational objectives set forth in the high school where this course is taught.

CIP Codes:

03.0101	03.0202	03.0401	03.0502	03.0601
03.0102	03.0301	03.0402	03.0506	03.9999

Suggested Grade Level:

8, 9, 10, 11, 12

Approved Courses:

Agricultural Mechanics and Basic Plant Science (I) 8006
Agricultural Mechanics and Basic Animal Science (II) 8008
Introduction to Natural Resources (III) 8040
Forestry, Wildlife, and Soil Management (IV) 8042
Natural Resources Business Management (V) 8044

Related Postsecondary Programs:

The Agricultural Resources program is articulated with the Agricultural and Natural Resources Technology program offered within the Virginia Community College System, which leads to an Associate in Applied Science Degree. Each degree program includes several majors, some of which are further divided into appropriate specializations.

Introduction to Natural Resources (III) 8040

Grade Level: 10 or 11 (suggested) (36 weeks)

Students develop knowledge and skills required for employment in occupations related to forestry and wildlife management; outdoor recreation; and air, soil, and water conservation. Because of the emphasis on different facets of natural resources management in different parts of the state, the course varies to meet local needs and interests. The course includes instruction in forest production and management, wildlife, soil and water conservation, mechanics relating to the field, and leadership training.

Forestry, Wildlife, and Soil Management (IV) 8042

Grade Level: 11 or 12 (suggested) (36 weeks)

Forestry, Wildlife, and Soil Management includes instruction in forest protection and harvesting, fish pond ecology and management, planning and operation of a hunting and fishing preserve, wildlife ecology and management, soil and water management systems, service and operation of large power equipment, and leadership training.

Natural Resources Business Management (V) 8044

Grade Level: 12 (suggested) (36 weeks)

Much of the instruction in this course may be individualized. Major learning areas include processing forest products, lumber grading, and determining the feasibility of establishing, financing, and managing a business such as forestry, outdoor recreation, wildlife, or urban conservation. Based upon interests, students may receive instruction in developing and operating campgrounds, hiking and riding trails, riding stables, marinas, vacation farms, and farm ponds. Operation and maintenance of equipment is also emphasized. Leadership training is an important area of instruction.

Horticulture

Description: The Horticulture program is a specialized occupational area in agricultural education. The program curriculum is based on the assumption that students have successfully completed Agricultural Mechanics and Basic Plant and Animal Science I and II. In addition to specific topics in the area of horticulture, the program stresses development of leadership abilities, work values, and attitudes.

CIP Codes: 01.0601 01.0604 01.0606 01.0699
01.0603 01.0605 01.0607

Suggested Grade Level: 8, 9, 10, 11, 12

Approved Courses:
Agricultural Mechanics and Basic Plant Science (I) 8006
Agricultural Mechanics and Basic Animal Science (II) 8008
Horticulture Sciences and Practices (III) 8034
Horticulture Operations (IV) 8036
Horticulture Management (V) 8038
Floral Production and Design (III) 8038
Nursery and Landscape Management (III) 8038
Horticulture Production and Marketing (III) 8038

Related Postsecondary Programs: The Horticulture program is articulated with the Agricultural and Natural Resources Technology program offered within the Virginia Community College System, which leads to an Associate in Applied Science Degree. Each degree program includes several majors, some of which are further divided into appropriate specializations.

Horticulture Sciences and Practices (III) 8034

Grade Level: 10 or 11 (suggested) (36 weeks)

Students develop the necessary knowledge, skills, habits, and attitudes for entry-level employment and advancement in areas such as floriculture, landscape design, greenhouse operation, nursery plant production, and turf management. Students receive instruction in using soil and other plant-growing media and in identifying, propagating, and growing horticultural plants in the greenhouse and land laboratory. Instruction is provided in safety practices and leadership development.

Horticulture Operations (IV) 8036

Grade Level: 11 or 12 (suggested) (36 weeks)

Units of instruction in this occupational preparation course include growing greenhouse crops; producing and maintaining nursery crops; establishing, maintaining, and designing landscape planting; establishing and maintaining turfgrass; and operating a flower shop and garden center. Leadership skills continue to be developed.

Horticulture Management (V) 8038

Grade Level: 12 (suggested) (36 weeks)

Much of the instruction in this occupational preparation course may be provided on an individual basis, and cooperative education is recommended as a part of this course. Major learning areas include planning and managing horticulture facilities and crops; managing horticultural businesses; and merchandising, advertising, displaying, and selling horticultural products and services. Leadership development is emphasized.

Floral Production and Design (III) 8038
Horticulture Production and Marketing (III) 8038
Nursery and Landscape Management (III) 8038

Grade Level: 10-12 (suggested) (36 weeks)

Each of these courses is designed as a one-year, triple-period, occupational preparation course offered at the tenth-, eleventh-, or twelfth-grade level in localities where no other horticulture course is offered. The particular course is selected by the local school according to student interest and occupational opportunities in the school community.

Senior Intensified

Description: The Senior Intensified program is designed for high school seniors who do not have marketable skills. Turf Management, within the Horticulture program area, provides students with job entry skills as groundskeepers. Farm Equipment Operator, within the Agricultural Mechanics Program area, prepares students with entry-level skills as operators of farm equipment. The courses are offered in either cooperative or classroom/laboratory setting.

CIP Codes: 01.0607 (Horticulture--Turf Management)
01.0299 (Agricultural Mechanics--Farm Equipment Operator)

Suggested Grade Level: 12

Approved Courses: Turf Management 8051
Farm Equipment Operator 8052

Turf Management 8051

Grade Level: 12 (suggested) (36 weeks)

Turf Management is a double-period program designed to help high school seniors acquire job-entry skills as groundskeepers. Instruction involves units in growing and maintaining turf grasses for areas such as lawns, golf courses, and athletic fields. The program includes instruction in the proper seeding, fertilizing, thatching, aerating, and mowing of grasses. Other units of instruction include disease control of turf and recommended methods of irrigation. Cooperative education is recommended as a part of this course.

Farm Equipment Operator 8052

Grade Level: 12 (suggested) (36 weeks)

This double-period course helps high school seniors acquire job-entry skills as operators of farm equipment. Instruction includes units on the safe operation and preventative maintenance of equipment used in planting, cultivating, fertilizing, dusting, spraying, and harvesting crops. Cooperative education is recommended as a part of this course.

Special Programs

Description:

The instructional programs in agricultural education that do not fit the category of regular programs are referred to here as "special programs." Generally, the programs described are specially designed for students who are not enrolled in regular programs for a variety of reasons and who require special services and assistance.

These specially designed programs meet student needs that cannot otherwise be met in regular programs and are approved for certain school divisions where such needs have been identified. These programs offer students different approaches to gaining skills needed for employment. It is recommended that teachers, guidance counselors, and others work very closely with students who enroll in special programs in developing individual training plans and instructional objectives.

The primary objective of these programs is to provide a means whereby the student may acquire agricultural occupational skills for employment. In addition, it is hoped that many students will improve to such an extent that they can succeed in regular programs, remaining in school and seeking further educational preparation. **Further information on the courses listed below can be obtained from the Agricultural Education Service, Virginia Department of Education.**

CIP Code: 01.9999

Suggested Grade Level: 8, 9, 10, 11, 12

Approved Courses:

Agricultural Education for the Disadvantaged 8050
Agricultural Education for the Disabled 8053
General Mechanics for the Disadvantaged 8070

Specialized Courses

Description:

Specialized courses enhance the programs offered in Agricultural Education by providing for concentrated instruction in areas of leadership, ecology, and conservation, small engine repair, agricultural concepts, and equine production. The local schools can offer the courses on an 18- or 36-week basis.

The courses are designed for students who wish to take an Agricultural Education course but are not enrolled in a program in Agricultural Education.

Specialized courses may substitute for the 8006 or 8008 courses in a program if approved by the local school system.

CIP Codes:

01.0399 (Applied Agricultural Concepts)
03.9999 (Ecology/Conservation)
01.0302 (Equine Management and Production)
01.0199 (Leadership)
01.0299 (Small Engine Repair)

Suggested Grade Level:

9, 10, 11, 12

Approved Courses:

Applied Agricultural Concepts 8072/8073
Ecology/Conservation 8045/8046
Equine Management and Production 8015/8080
Leadership 8009/8081
Small Engine Repair 8021/8082

Applied Agricultural Concepts 8072 (18 weeks)
Applied Agricultural Concepts 8073 (36 weeks)

Grade Level: 9-12

Students who have limited or no agricultural background or experience learn fundamental agricultural competencies needed for rural or urban living. Areas of instruction include meat grading and selection; maintenance of home appliances and equipment; and the study of plumbing, electrical wiring, and carpentry fundamentals. Teachers may incorporate additional competencies in the study of soil fertility and in cultural practices for shrubs, lawns, gardens, and fruit trees. The course emphasizes leadership development activities and participation in FFA activities.

Ecology/Conservation 8045 (18 weeks)
Ecology/Conservation 8046 (36 weeks)

Grade Level: 9-12 (18 or 36 weeks)

Students develop conservation competencies and skills through the understanding of environmental concerns. Instructional content includes the care, management, and preservation of soil, air, water, and wildlife. Students identify and discuss prevalent environmental problems and learn methods and practices used to preserve natural resources and maintain a healthy ecology. Teachers incorporate specific environmental concerns and issues common to the local school community. The course emphasizes leadership activities and opportunities to participate in FFA functions.

Equine Management and Production 8015 (18 weeks)
Equine Management and Production 8080 (36 weeks)

Grade Level: 9-12

In this course, students learn how to care for and manage horses. Equine health, nutrition, management, reproduction, training, evaluation, and showmanship are the major instructional areas. In addition, course content includes instruction in the tools, equipment, and facilities for equine enterprises. Business management topics include the economics of boarding, training, and merchandising horses. Leadership development activities are included, and participation in FFA activities is encouraged.

Leadership Development 8009 (18 weeks)
Leadership Development 8081 (36 weeks)

Grade Level: 9-12

This course equips students with personal and group leadership skills. Course content includes units in principles of leadership, officer training, parliamentary law, public speaking, the development of effective communication and human relations skills, the development of positive public relations, and the use of proper etiquette. Principles of organizing and conducting group meetings and activities are also included in the instructional program. Students are encouraged to be active members of a community or school organization.

Small Engine Repair 8021 (18 weeks)
Small Engine Repair 8082 (36 weeks)

Grade Level: 9-12

This course offers an intensive study of the operation, maintenance, and repair of small gasoline and diesel engines. Instructional topics include principles of operation of gasoline and diesel engines, tune-up and maintenance procedures, and disassembly, overhaul, and reassembly. Instruction may also include the operation of two-cycle and four-cycle engines commonly found on lawn mowers, garden tractors, snow blowers, rotary tillers, chainsaws, and other equipment. The course emphasizes leadership activities and opportunities to participate in FFA functions.

Agricultural Education
Approved Program Completer Options

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Agricultural Business Agricultural Mechanics and Basic Plant Science (I) (8006) Agricultural Mechanics and Basic Animal Science (II) (8008) Agricultural Business Fundamentals (III) (8022) Agricultural Business Operations (IV) (8024) Agricultural Business Management (V) (8026)	Any two courses, at least one of which is at Level III, IV, or V	Any three courses, at least two of which are at Level III, IV, or V
Agricultural Machinery Service Agricultural Mechanics and Basic Plant Science (I) (8006) Agricultural Mechanics and Basic Animal Science (II) (8008) Agricultural Power and Equipment (III) (8016) Agricultural Mechanization Sales and Service (IV) (8018) Advanced Agricultural Mechanization (V) (8020)	Any two courses, at least one of which is at Level III, IV, or V	Any three courses, at least two of which are at Level III, IV, or V
Agricultural Production Agricultural Mechanics and Basic Plant Science (I) (8006) Agricultural Mechanics and Basic Animal Science (II) (8008) Agricultural Production Technology (III) (8010) Agricultural Production Management (IV) (8012) Operating the Farm Business (V) (8014)	Any two courses, at least one of which is at Level III, IV, or V	Any three courses, at least two of which are at Level III, IV, or V
Natural Resources Management Agricultural Mechanics and Basic Plant Science (I) (8006) Agricultural Mechanics and Basic Animal Science (II) (8008) Introduction to Natural Resources (III) (8040) Forestry, Wildlife, and Soil Management (IV) (8042) Natural Resources Business Management (V) (8044)	Any two courses, at least one of which is at Level III, IV, or V	Any three courses, at least two of which are at Level III, IV, or V

Note: Specialized courses may substitute for the 8006 or 8008 courses in a program if approved by the local school division.

Agricultural Education
Approved Program Completer Options
(continued)

Program Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Horticulture (Regular program) Agricultural Mechanics and Basic Plant Science (I) (8006) Agricultural Mechanics and Basic Animal Science (II) (8008) Horticulture Sciences and Practices (III) (8034) Horticulture Operations (IV) (8036) Horticulture Management (V) (8038)	Any two courses, at least one of which is at Level III, IV, or V	Any three courses, at least two of which are at Level III, IV, or V
Horticulture (Triple-period one-year programs) Floral Production and Design (III) (8038) Nursery and Landscape Management (III) (8038) Horticulture Production and Marketing (III) (8038)	Any course	Any two courses

Note: Specialized courses may substitute for the 8006 or 8008 courses in a program if approved by the local school division.

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The Business Program in Virginia

Overview

The Business program offerings are designed to meet two widely recognized goals:

- ❖ Attainment of business skills and knowledge, including career exploration for all.
- ❖ Preparation for entering business occupations and for pursuing additional education.

Business Program

Unlike previous business curricula that have multiple occupational programs, only one program, Business, is proposed in this draft curriculum. The nature and role of office occupations have changed, and there is duplication if the areas are separated.

The program is based on a foundation of keyboarding and word processing skills along with courses in Computer Applications, Computer Solutions, Career Pathways, Make It Your Business, and Principles of Business and Marketing. Enrollment in the foundation courses allows students to explore a variety of careers. Students not only receive instruction in the fundamental skills associated with a number of business occupations but also learn essential life management skills.

Intensive preparation for business and office careers is available at the secondary level. Courses are available that will enable students to explore opportunities in business, prepare for entry and advancement on the job, develop management skills, and identify further education and training necessary within a chosen career cluster.

Opportunities for special populations to receive preparation for entry and advancement on a job are available in the Office Specialist courses. Individuals with special needs may be served through a special business studies course. Course content is based on each student's individualized educational plan.

Note: Local school divisions may decide to alter the curriculum framework for such items as course titles, additional (multiple) periods, longer time frames, additional prerequisites, grade level adjustments, and sequence of course offerings and to make other modifications necessary for successful local operation. Where such changes affect curriculum, the adaptations must be made locally and validated by local advisory councils.

The Business curriculum has been revised for 1995-96, subject to further validation. Information related to the 1994-95 curriculum is contained in the 1993 edition of the *Guide to Vocational Program Planning* and the *1994 VERS User's Manual.*

Cooperative Office Education

Cooperative Office Education (COE) is a teaching method available in each occupational course. It includes supervised, on-the-job instruction. Students attend classes part of the day and work in an approved business/office position part of the day. The teacher-coordinator develops with the on-the-job training sponsor and the student an individualized training plan identifying learning experiences according to the student's occupational objective. The on-the-job instruction is an extension of the classroom instruction coordinated by the classroom teacher into a single learning package.

All occupational courses listed for Business are eligible for the cooperative education method of instruction. Local school divisions should identify which of the occupational courses they designate as Cooperative Office Education courses.

Student Organization: Future Business Leaders of America

The Future Business Leaders of America (FBLA) is the vocational student organization for all individuals enrolled in business courses. The activities are specially related to the development of personal employability and leadership skills. Through participation in the organization, business students learn to engage in individual and group business enterprises, to hold office and direct the affairs of a group, to work with representatives of other student organizations, and to compete honorably with their colleagues.

Employment Opportunities

Entry (After high school graduation)

Account Clerk
Account Collector
Administrative Assistant
Assistant Analyst
Audit Assistant
Benefits Analyst
Credit Representative
Customer Service Representative
Data Entry Operator
Desktop Publisher
Disk Librarian
Employment Interviewer
Financial Service Representative
Information Assistant
Loan Interviewer
Medical Records Technician
New Accounts Representative
Office Technician
Payables/Receivables Analyst
Payroll Clerk
Personnel Assistant
Production Technician
Records Assistant
Records Processor
Secretary
Service Representative
Service Technician
Technical Support Analyst
Word Processor

Technical (Postsecondary education)

Account Specialist
Accounting Technician
Administrative Service Supervisor
Applications Specialist
Applications Systems Analyst
Appraiser
Associate Accounting
Bookkeeper
Budget Analyst
Business Representative
Claims Representative
Claims Agent
Computer Graphic Artist
Contract Specialist
Cost Estimator
Credit Analyst
Database Administrator
Employment Interviewer
Fiscal Analyst
Human Resources Manager
Information Systems Specialist
Junior Accountant
Labor Relations Specialist
Loan Specialist
Local Area Network Representative
Management Information Systems (MIS)
Office Automation Specialist
Office Manager
Paralegal
Personnel Analyst
Personnel Technician
Project Director
Purchasing Agent
Records Management Analyst
Securities Administrator
Systems Programmer
Tax Preparer
Technical Writer
Telecommunications Specialist

Professional (College/university/ postsecondary)

Accountant
Accountant Executive
Applications Programmer
Appraiser
Associate Systems Engineer
Auditor
Bank Manager
Benefits Manager
Business Manager
Business Professor
Chief Financial Officer
Consulting Systems Engineer
Contract Administrator
Controller
Computer Operations Manager
Computer Programmer
Corporate Trainer
Credit Manager
Director of Administrative Services
Director of Finance
Education Specialist
Escrow Officer
Facilities Manager
Information Systems Administrator
Information Systems Analyst
Insurance Manager
Labor Relations Negotiator
Management Consultant
Operations Research Analyst
Personnel Manager
Production Manager
Program Director
Risk Manager
Securities Analyst
Stockbroker
Software Programmer
Telecommunications Manager
Training Manager
Trust Officer

Related Postsecondary Programs

Accounting
Business Management and Administration
Computer Information Systems
Computer Science
Economics
Information Systems
Management Information Systems
Legal Administration
Medical Assisting
Office Administration
Office Systems Technology

Business Courses

NOTE: Local school divisions may decide to alter the curriculum framework for such items as course titles, additional (multiple) periods, longer time frames, additional prerequisites, grade level adjustments, and sequence of course offerings, and to make other modifications that are necessary for successful local operation. Where such changes affect curriculum, the adaptations must be made locally and validated by local advisory councils.

Courses	Course Code	CIP Code	Suggested Grade Level	No. Weeks	Suggested Maximum Class Size	Class Periods	Credits
Foundation: Elementary Level							
Keyboarding/ Integrated Approach	N/A	N/A	K-5	20 Hrs. Minimum	N/A	Daily, Length to be Determined Locally	
Foundation: Middle School and Junior and Senior High School							
Keyboarding (Middle)	6150	52.0408	6-8	6,9,12,18	25	1	---
Keyboarding (Secondary)	6151	52.0408	9-12	18	25	1	1/2
Keyboarding Applications	6152	52.0408	9-12	18, 36	25	1	1/2, 1
Career Pathways		52.9999	6-12	Local Deter.	25	1	1/2, 1
Phase I	9070						
Phase II	9071						
Phase III	9072						
Phase IV	9073						
Computer Applications	6611	52.1299	7-10	18, 36	25	1	1/2, 1
Computer Solutions	6610	52.1299	7-8	6,9,12,18,36	25	1	---
Make It Your Business•	6110	52.0701	6-8	6,9,12,18	25	1	---
Principles of Business and Marketing•	6115	52.0101	9-10	18, 36	25	1	1/2, 1
•Note: These courses are developed jointly by business and marketing educators and carry both business and marketing endorsements.							
Occupational: Comprehensive High School, Technical Center, Alternative Schools							
Note: All occupational courses listed are available to all students to complement their academic or other vocational preparational program. Certain competencies generic to all courses must be identified, evaluated, and documented.							
Accounting	6320	52.0302	10-12	36	25	1	1
Advanced Accounting	6321	52.0302	11-12	36	25	1	1
Business Law	6131	52.0202	11-12	18, 36	25	1	1/2, 1
Business Management	6135	52.0201	11-12	18, 36	25	1	1/2, 1
Computer Information Systems	6612	52.1201	10-12	18, 36	20	1	1/2, 1
Adv. Computer Information Systems	6613	52.1201	11-12	36	20	1 or 2	1 or 2
Desktop/Multimedia Presentations	6630	52.0407	11-12	18, 36	20	1	1/2, 1
Finance	6120	52.0899	11-12	18, 36	25	1	1/2, 1
Legal Systems Administration	6735	52.0403	11-12	18, 36	20	1 or 2	1/2 to 2
Medical Systems Administration	6730	52.0404	11-12	18, 36	20	1 or 2	1/2 to 2
Notetaking	6241	52.0401	9-12	18, 36	25	1	1/2, 1
Office Administration	6621	52.0401	10-12	18, 36	25	1	1/2, 1
Word Processing	6625	52.0407	9-12	18, 36	20	1	1/2, 1
Special Programs							
Office Specialist I	6740	52.0408	9-12	36	15*	1 or 2	1 or 2
Office Specialist II	6741	52.0408	10-12	36	15*	1 or 2	1 or 2
Office Specialist III	6742	52.0408	11-12	36	15*	1 or 2	1 or 2
Office Specialist IV (Special Populations)	6743	52.0408	12	36	15*	1 or 2	1 or 2
Business--Individualized Education Program	6745	52.0408	9-12	36	10*	1 or 2	1 or 2

*Required maximum class size

Cooperative Office Education (COE): All occupational courses listed for the Business program are eligible for the cooperative education method of instruction. Local school divisions should identify which of the occupational courses they designate as COE.

Elementary Level Courses

An integrated approach to providing keyboarding instruction to students in the elementary grades is recommended when appropriate instructional staff, hardware, software, and instructional scope and sequence are available. A position paper, a keyboarding instructional guide, and training are available from the Department of Education, Business program area specialist.

Foundation Courses

Keyboarding 6150 (Middle School)

Grade Levels: 6, 7, 8 (6/9/12/18 weeks) CIP Code: 52.0408
Prerequisite: None

This course is designed for middle school students to develop touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students learn to produce simple technical and non-technical documents.

Keyboarding 6151 (Secondary)

Grade Levels: 9-12 (18 weeks) CIP Code: 52.0408
Prerequisite: None

This course is designed for secondary school students to develop and enhance touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students learn to produce simple technical and nontechnical documents.

Keyboarding Applications 6152

Grade Levels: 9-12 (18, 36 weeks) CIP Code: 52.0408
Prerequisite: None

Students develop or refine touch skills for entering alphabetic, numeric, and symbol information on a keyboard. Students apply keyboarding skills to produce a variety of personal and business documents. (Students who can demonstrate touch keyboarding skills may test out and enter into the applications semester to develop document preparation skills.)

Note: Local school divisions may decide to alter the curriculum framework for such items as course titles, additional (multiple) periods, longer time frames, additional prerequisites, grade level adjustments, and sequence of course offerings and to make other modifications that are necessary for successful local operation. Where such changes affect curriculum, the adaptations must be made locally and validated by local advisory councils.

Career Pathways
9070 (Phase I), 9071 (Phase II), 9072 (Phase III), 9073 (Phase IV)

Grade Levels: 6-12 (Duration to be determined locally) CIP Code: 52.9999
Prerequisite: None

In this four-phase competency-based program of career exploration, all students study how to find the right career (Phase I) and investigate career clusters (Phases II and III). The program may culminate in choosing and preparing for careers (Phase IV). Localities identify clusters and design the program based on the needs of the community. (Note: The four phases usually require a two-year time frame.)

Computer Applications 6611

Grade Levels: 7-10 (18, 36 weeks) CIP Code: 52.1299
Prerequisite: Keyboarding recommended

Students develop or review correct keyboarding techniques and gain a basic knowledge of word processing, spreadsheet, database, and graphics applications. Students demonstrate an understanding of computer concepts through application of knowledge. Students learn to use software packages and to operate many types of equipment such as word processors, printers, copiers, and computers.

Computer Solutions 6610

Grade Levels: 7, 8 (6/9/12/18/36 weeks) CIP Code: 52.1299
Prerequisite: None

Students use the computer as a problem-solving tool to complete a variety of projects. Students participate in team-building activities that integrate academic and business competencies. Basic touch keyboarding instruction is provided early in the course.

Make It Your Business 6110

Grade Levels: 6, 7, 8 (6/9/12/18 weeks) CIP Code: 52.0701
Prerequisite: None

Students are provided opportunities to run a business based on their own design for providing a service or product needed at their school. They learn business terminology, basic entrepreneurship concepts, and fundamental business operating principles in this course. Design of course content provides for interdisciplinary approaches.

Principles of Business and Marketing 6115

Grade Levels: 9, 10 (18, 36 weeks) CIP Code: 52.0101
Prerequisite: None

Students explore the roles of business and marketing in the free enterprise system and the global economy. They study how the American economy operates and prepare to make decisions as consumers, wage earners, and citizens.

Occupational Courses

Accounting 6320

Grade Levels: 10-12 (36 weeks) CIP Code: 52.0302
Prerequisite: Keyboarding recommended

Students study the basic principles, concepts, and practices of the accounting cycle. Students learn fundamental accounting procedures using a manual and an electronic system.

Advanced Accounting 6321

Grade Levels: 11, 12 (36 weeks) CIP Code: 52.0302
Prerequisite: Accounting

Students gain in-depth knowledge of accounting procedures and techniques utilized in solving business problems and making financial decisions. They use the calculator, computer, and accounting software, with emphasis on electronic spreadsheets, to analyze and interpret business applications.

Business Law 6131

Grade Levels: 11, 12 (18, 36 weeks) CIP Code: 52.0202
Prerequisite: None

Students examine the foundations of the American legal system. They explore economic and social concepts as they relate to legal principles and to business and personal laws.

Note: Local school divisions may decide to alter the curriculum framework for such items as course titles, additional (multiple) periods, longer time frames, additional prerequisites, grade level adjustments, and sequence of course offerings and to make other modifications that are necessary for successful local operation. Where such changes affect curriculum, the adaptations must be made locally and validated by local advisory councils.

Business Management 6135

Grade Levels: 11, 12 (18, 36 weeks) CIP Code: 52.0201
Prerequisite: None

Students study basic management concepts and leadership styles as they explore business ownership, planning, economics, international business, and human relations issues such as employee motivation and conflict resolution. Student leadership skills may be enhanced by internship experiences.

Computer Information Systems 6612

Grade Levels: 10-12 (18, 36 weeks) CIP Code: 52.1201
Prerequisite: Keyboarding Applications*

Students apply problem-solving skills to real-life situations through (a) database, spreadsheet, and word processing software; (b) charting; and (c) integrated activities. They work individually and in groups to explore data/telecommunications, operating systems, and basic networking principles.

*Keyboarding course(s) or teacher approved demonstrated touch keyboarding skills.

Advanced Computer Information Systems 6613

Grade Levels: 11, 12 (36 weeks) CIP Code: 52.1201
Prerequisite: Computer Information Systems

Students study advanced integrated computer applications, programming, expert systems, networking, and telecommunications and the impact of new and emerging technologies in each of these areas. When this course is offered as a daily, multiple-period class, students study all of the above areas. When offered in comprehensive high school schedules, two or more of these areas are emphasized.

Desktop/Multimedia Presentations 6630

Grade Levels: 11, 12 (18, 36 weeks) CIP Code: 52.0407
Prerequisites: Keyboarding/Computer Applications

Students develop proficiency in using desktop publishing software to create a variety of business publications. Students work with sophisticated hardware and software to develop multimedia presentations.

Note: Local school divisions may decide to alter the curriculum framework for such items as course titles, additional (multiple) periods, longer time frames, additional prerequisites, grade level adjustments, and sequence of course offerings and to make other modifications that are necessary for successful local operation. Where such changes affect curriculum, the adaptations must be made locally and validated by local advisory councils.

Finance 6120

Grade Levels: 11, 12 (18, 36 weeks) CIP Code: 52.0899
Prerequisite: None

Students explore many facets of financial decision-making involved in daily life. Skills in money management, recordkeeping, and banking are enhanced through the study of basic concepts of economics, insurance, credit, and other related topics. As a year offering, the course will also prepare students occupationally to plan, manage, and analyze the financial and monetary aspects and performance of business enterprises, banking institutions, or other organizations.

Legal Systems Administration 6735

Grade Levels: 11, 12 (18, 36 weeks) CIP Code: 52.0403
Prerequisites: Keyboarding Applications
(Administrative Systems*)

Students completing Administrative Systems and wishing to gain employment in the legal field may take this course to learn how to use legal terminology and procedures useful in preparing legal documents and functioning effectively in a law office.

*When this course is offered as a daily multiple-period class, the competencies identified in the Administrative Systems course may be included.

Medical Systems Administration 6730

Grade Levels: 11, 12 (18, 36 weeks) CIP Code: 52.0404
Prerequisites: Keyboarding Applications
(Administrative Systems*)

Students completing Administrative Systems and wishing to gain employment in the medical field may take this course to learn how to use medical terminology and procedures useful in developing medical documents and functioning effectively in a medical office environment.

*When this course is offered as a daily multiple-period class, the competencies identified in the Administrative Systems course may be included.

Notetaking 6241

Grade Levels: 9 - 12 (18, 36 weeks) CIP Code: 52.0401
Prerequisite: Keyboarding recommended

Students learn an easy, abbreviated writing system of notetaking that enables them to take and transcribe notes for educational, business, or personal use. Students explore reasons for taking notes, ways to listen effectively, and strategies for improving communication and study skills for academic success.

Office Administration 6621

Grade Levels: 10-12 (18, 36 weeks) CIP Code: 52.0401
Prerequisite: Keyboarding Applications

Students enhance word processing and communication skills as they develop competencies needed by administrative support professionals. Students study office procedures such as machine dictation/transcription, telecommunications, electronic records management, and financial records management.

Note: Completion of this course may prepare students for apprenticeship in an occupation related to administrative support. For further information, contact the Virginia Department of Labor, Apprenticeship Division.

Word Processing 6625

Grade Levels: 9-12 (18, 36 weeks) CIP Code: 52.0407
Prerequisite: Keyboarding*

Students develop intermediate to advanced level word processing skills using a variety of software functions, including graphics and desktop publishing. Students gain competence integrating other applications such as database and spreadsheet into word processing activities. Classroom experiences also provide for skill development in communication.

*Keyboarding course(s) or teacher approved demonstrated touch keyboarding skills.

Special Programs

Office Specialist I (6740), II (6741), III (6742), IV (6743) (Special Populations)

Grade Levels: 9-12 (36 weeks) CIP Code: 52.0408
Prerequisite: None

Students complete the Office Specialist sequence identified locally or progress in the sequence until prepared to transfer into other business courses. Students develop skills in areas including keyboarding, word processing, office procedures, and records management.

Note: Completion of this course may prepare students for apprenticeship in an occupation related to administrative support. For further information, contact the Virginia Department of Labor, Apprenticeship Division.

Business—Individualized Education Program 6745

Grade Levels: 9 - 12 (36 weeks) CIP Code: 52.0408
Prerequisite: None

This course is designed by each local school division to serve students with special needs who desire and can benefit from business studies. The course is developed cooperatively between local business and special education personnel based on an individualized education plan for each student. Course length is determined by students' needs and job requirements.

Note: Completion of this course may prepare students for apprenticeship in an occupation related to administrative support. For further information, contact the Virginia Department of Labor, Apprenticeship Division.

Generic Course Competencies

Competencies generic to all business courses are currently found in appendices located in the *Business Education Suggested Course Competencies and Performance Objectives.* As course offerings are revised or combined, these appendices will be modified. Based on the results of these modifications, competencies common to business courses will be identified, extracted, and presented in a format to be determined.

Competencies will be identified in areas such as

- All Aspects of the Industry
- Business Math
- Communications
- Computer Basics
- Employability Skills, Leadership/Professional Development, and Work Ethics

Note: Local school divisions may decide to alter the curriculum framework for such items as course titles, additional (multiple) periods, longer time frames, additional prerequisites, grade level adjustments, and sequence of course offerings and to make other modifications that are necessary for successful local operation. Where such changes affect curriculum, the adaptations must be made locally and validated by local advisory councils.

Business
Program Completer Options

Minimum completer requirements for a regular business program are as follows:

- Keyboarding prerequisite: Students may successfully complete an approved keyboarding course, or if they can demonstrate touch keyboarding skills, may test out to the teacher's approval (competencies must be documented).

and

- Generic competencies required for all courses (see page 13) must be identified and documented.

and

- Any two occupational courses* (or semester equivalents that equal two 36-week courses) must be taken.
  Note: Technical center block programs that meet the equivalent of two 36-week courses constitute a completion when combined with the requirements listed above.

Occupational courses (See chart, pp. 6) for suggested grade levels and course length.):

Accounting
Advanced Accounting
Business Law
Business Management
Computer Information Systems
Adv. Computer Information Systems
Desktop/Multimedia Presentations
Finance
Legal Systems Administration
Medical Systems Administration
Notetaking
Office Administration
Word Processing

Examples of Program Completions

Full year courses:
Keyboarding prerequisite
Computer Inf. Systems, 36 weeks
Adv. Computer Inf. Systems, 36 weeks

Combined year and semester courses:
Keyboarding prerequisite
Accounting, 36 weeks
Business Management, 18 weeks
Business Law, 18 weeks

Semester courses:
Keyboarding prerequisite
Office Administration, 18 weeks
Word Processing, 18 weeks
Desktop/Multimedia Presentations, 18 weeks
Notetaking, 18 weeks

Special Programs

- Special programs do not require a prerequisite. Students are considered program completers when they successfully fulfill the requirements of the highest level offered in the school division.

Note: School divisions should guide students in planning for meaningful, sequential program completions.

High School Graduation Requirements
21-Unit Diploma—Sample

Period*	9th Grade	10th Grade	11th Grade	12th Grade
1	English	English	English	English
2	History		Government	World Studies
3	Algebra I or Basic Algebra	Geometry or Informal Geometry		
4	Earth Science	Biology I		
5	Physical Education	Physical Education		
6	Principles of Business and Marketing	Keyboarding Applications	Word Processing	Office Administration

Note: Blanks may be filled in by other business courses that complement the business concentration, or by other courses that constitute a vocational program mix, or by the following suggested academic complementary courses: Language and Composition, Journalism, Speech; Economics, International Relations; Computer Mathematics, Intermediate Algebra, and Trigonometry or Algebra II; Chemistry I.

*Seven-period and block scheduling would allow additional opportunities.

High School Graduation Requirements
23-Unit Diploma—Sample

Period*	9th Grade	10th Grade	11th Grade	12th Grade
1	English	English	English	English
2	History	Physical Education	Government	World Studies
3	Algebra I	Geometry	Intermediate Algebra and Trigonometry or Algebra II	
4	Physical Education	Earth Science	Biology I	Chemistry I
5	Foreign Language	Foreign Language	Foreign Language	
6	Principles of Business and Marketing	Keyboarding Applications	Accounting	Advanced Accounting

Note: Blanks may be filled in by other business courses that complement the business concentration, or by other courses that constitute a vocational program mix, or by the following suggested academic complementary courses: Language and Composition, Journalism, Speech; Economics, International Relations; Probability and Statistics; Physics.

*Seven-period and block scheduling would allow additional opportunities.

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Program Completer Options
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Health Occupations Education in Virginia

Overview

Health Occupations Education, including practical nurse education, is designed to meet the following goals:

- To introduce secondary students to nursing, medical, dental, and allied health occupations
- To prepare students with basic skills for employment in nursing homes, clinics, medical and dental offices, hospitals, homes, and certain public health settings
- To facilitate entry into advanced health occupations programs that require post-high school education leading to state licensure, certification, registration, or national credentialling
- To enable students to become more knowledgeable consumers of health services.

The occupational preparation programs provide the knowledge for career choice and basic skill training with which students immediately can enter employment in the health field for which they were trained, or move into advanced training for health occupations at the technical and professional levels. Programs offered during the tenth, eleventh, and twelfth grades include health career exploration and preparation for aide or assistant-level positions in the following areas:

- Nursing--certified nurse's aide or licensed practical nurse
- Medical--medical assistant, emergency medical technician-A, or surgical technologist
- Dental--dental assistant
- Allied Health--physical or occupational therapy aide, respiratory therapy assistant, rehabilitation aide, dietary aide, laboratory aide, geriatric aide, home health aide, housekeeping aide, sterile supply aide, transportation aide, or veterinary assistant.

The first course of every occupational program is normally scheduled as a two-hour block program. However, under certain conditions, a course may be offered as one-hour or three-hour program once permission of the Health Occupations Education Specialist has been secured. Five content areas are applicable to all health occupations offerings:

- Biomedical health sciences
- Basic health care knowledge and skills
- Health careers orientation and selection
- Communication and problem-solving skills
- Psycho-social care skills.

Teacher-supervised work education or on-the-job training such as a clinical practicum, a cooperative program, or a work experience situation is an integral part of each program; some require minimal time, while others, such as practical nursing, may require as much as six months of teacher-supervised clinical hospital practice. Work education or on-the-job training is an extension of the classroom instruction and is coordinated by the health occupations teacher. It may be scheduled outside of regular school hours if approved by the teacher and appropriate school officials. Shadowing may be an integral part of the exploratory course.

Local school divisions determine how programs are structured. Programs may be offered in two- or three-hour blocks or in a one-hour block the first year and a two-hour block the second year.

Student Organization: Health Occupations Students of America

Virginia HOSA (Health Occupations Students of America) is the recognized student organization for approved Health Occupations Education programs and courses. Virginia HOSA is a member of the national HOSA Association, recognized by the United States Department of Education as an integral part of the HOE program. Local HOSA activities, which are an outgrowth of classroom and on-the-job training, reinforce the student's basic skills and knowledge, as well as attitudes and behavior leading to success as an entry-level employee. Development of leadership abilities is also stressed.

Substitution for High School Science, Mathematics, and Practical Arts Credits

- A student who completes the senior year triple-period block portion of the Practical Nursing program that includes pharmacology may substitute it for a mathematics or science credit in the 21-unit diploma.

- A student who attains the competencies identified for any of the following two-year programs is classified as a program completer and may substitute it for one science credit in the 21-unit diploma:

Health Careers Cluster
Dental Assistant
Nurse's Assistant
Veterinary Assistant
Medical Assistant
Surgical Technology
Emergency Medical Technology (EMT-A).

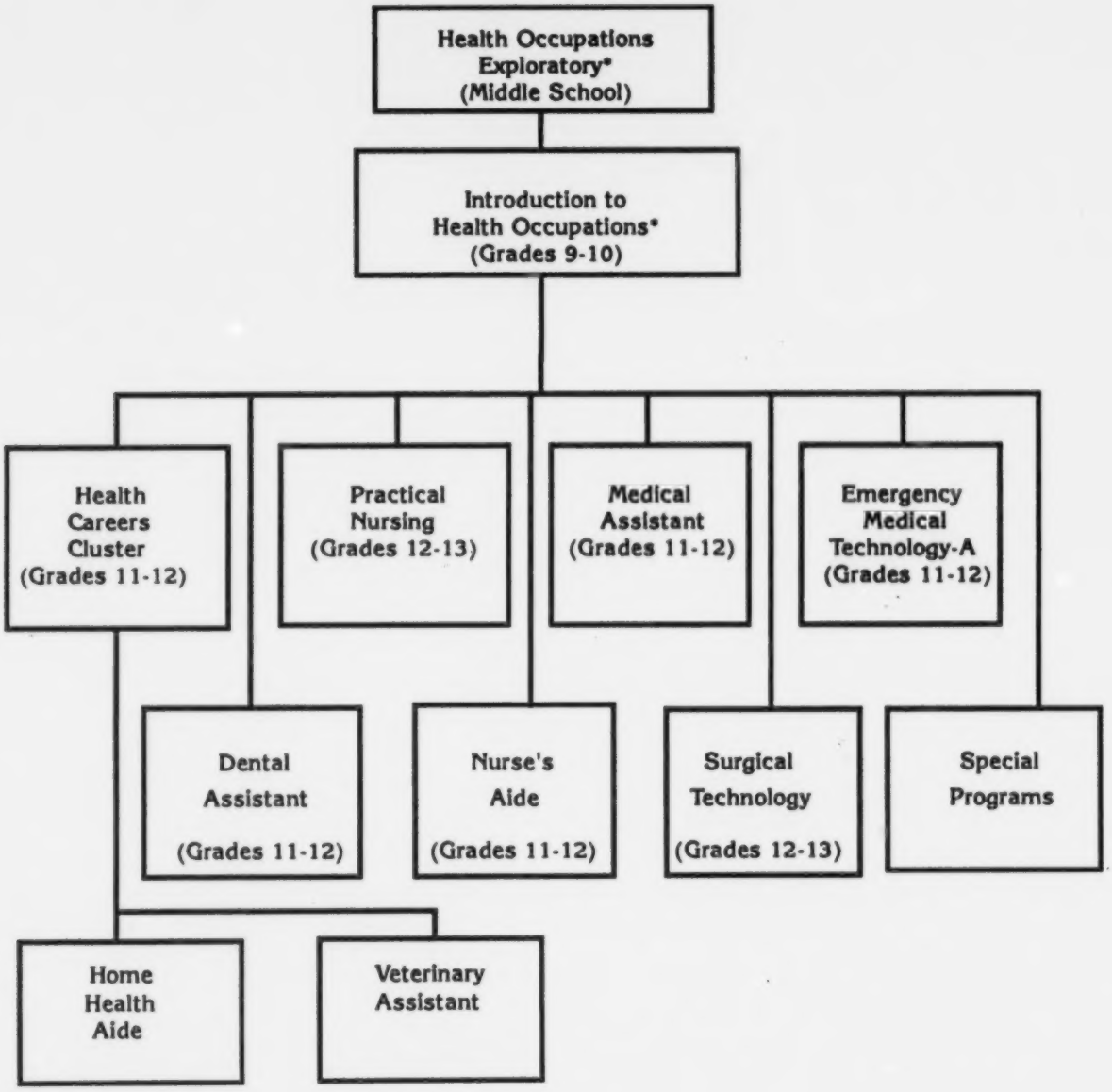
- One unit of science for the 21-unit diploma is allowed for students who complete requirements for the following programs:

Health Careers Cluster	Medical Assistant
Dental Assistant	Surgical Technology
Nurse's Assistant	Veterinary Assistant.

- Health Occupations courses designed for grades 9-12 can be taken to satisfy a practical arts graduation requirement.

Note: The decision to allow any substitution is a local option.

Health Occupations Education
Recommended Program Sequence


Health Occupations Exploratory* (Middle School)
Introduction to Health Occupations* (Grades 9-10)
Health Careers Cluster (Grades 11-12)
Practical Nursing (Grades 12-13)
Medical Assistant (Grades 11-12)
Emergency Medical Technology-A (Grades 11-12)
Dental Assistant (Grades 11-12)
Nurse's Aide (Grades 11-12)
Surgical Technology (Grades 12-13)
Special Programs
Home Health Aide
Veterinary Assistant

*Health Occupations Exploratory (8370) and Introduction to Health Occupations (8302) are strongly recommended but not required as prerequisites for occupational programs.

Health Occupations Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Exploration				
Health Occupations Exploratory	8370	Middle School	18	
Introductory				
Introduction to Health Occupations	8302	9-10	36	
Dental Assistant*				
Dental Assistant I	8328	11	36	20
Dental Assistant II	8329	12	36	20
Emergency Medical Technology*				
Emergency Medical Technician-A I	8333	11	36	
Emergency Medical Technician-A II	8334	12	36	
Health Careers Cluster*/Home Health Aide*				
Health Assistant I	8331	11	36	
Health Assistant II	8332	12	36	
Health Occupations Cooperative Education *				
Health Occupations Cooperative Education I	8395	11	18/36	20
Health Occupations Cooperative Education II	8396	12	36	20
Medical Assistant*				
Medical Assistant I	8345	11	36	
Medical Assistant II	8346	12	36	
Nurse's Assistant*				
Nursing Assistant I	8360	11	36	
Nursing Assistant II	8362	12	36	
Veterinary Assistant*				
Veterinary Assistant I	8310	10-12	36	
Veterinary Assistant II	8311	11-12	36	
Veterinary Assistant III	8312	12	36	
Practical Nursing*				
Practical Nursing I	8357	12	36	
Practical Nursing II (Adult)	8358	13	36	10
Surgical Technology*				
Surgical Technologist I	8351	12	36	
Surgical Technologist II (Adult)	8352	13	4 months	

*Approved program

Health Occupations Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Occupational Mix				
Home Health Aide	8364	11, 12	36	
Special Programs*				
Health Occupations for the Disadvantaged I	8361	Ungraded	According	15
Health Occupations for the Disadvantaged II	8363		to Program	15
Health Occupations for the Disabled I	8381		Design	10
Health Occupations for the Disabled II	8382			10

*Approved program

Health Occupations Exploration

Description: This program is currently under development in collaboration with representatives of industry, local school divisions, and the Department of Education.

CIP Code: 51.9999

Suggested Grade Level: Middle School

Complementary Course: Careers and You (8475)

Approved Courses: Health Occupations Exploratory (8370)

Related Postsecondary Programs: N/A

Health Occupations Exploratory 8370

Grade Level: Middle School (18 weeks) Complementary Course: Careers and You

This one-semester, single-period course follows a complementary course such as "Careers and You." Students explore families of health careers and related occupations, participate in self-awareness activities, and receive an overview of the national health industry. Course content may also include the criteria for entering certain biomedical scientific careers and activities dealing with communication, problem-solving, and critical thinking.

Introductory

Description:

Introduction to Health Occupations is a single-period, one-year course designed to introduce to the student all health occupations and to develop basic skills common to all health occupations. The purposes of the course are to

- acquaint the student with the health care industry
- introduce the student to all health occupations
- survey various health careers
- enable the student to select one or more careers for an in-depth study
- help the student determine if he or she wishes to become a worker in the health care industry
- help the student in choosing a health career
- help the student select a specific occupational preparation program.

As a foundation course, Introduction to Health Occupations contains generic skills and knowledge necessary for all occupational program offerings. Additionally, the course is recommended to those students interested in a career that requires postsecondary study.

When students do not take Introduction to Health Occupations, core competencies of that course must be included in the first year of the occupational program. These core competencies include communication skills, health worker body mechanics, first aid procedures, and CPR techniques.

CIP Code: 51.9999

Suggested Grade Level: 9, 10

Complementary Course: Health Occupations Exploratory (8370)

Approved Courses: Introduction to Health Occupations (8302)

Related Postsecondary Programs: Refer to the *Allied Health Education Directory*, 12th edition. All occupations accredited by the American Medical Association (AMA) Committee on Allied Health Education and Accreditation (CAHEA) are listed in this publication.

Introduction to Health Occupations 8302

Grade Level: 9-10 (suggested) (36 weeks) Prerequisites: None

This single-period course introduces the student to all health care careers and develops basic skills common to all health occupations. It is recommended as the first course for the following occupational offerings:

Practical Nursing I 8357
Nursing Assistant I 8360
Health Assistant I 8331
Emergency Medical Technician-A I 8333
Dental Assistant I 8328
Medical Assistant I 8345
Surgical Technologist I 8351

Students study families of health careers such as dental, medical, nursing, allied health, and related occupations. Introduction of basic health care skills prepares students for advanced occupational skill training. Organizations for health care, financing of patient services, and ethics may be studied. Field trips to health care facilities and interviews with selected health workers can be included. Student volunteer activities, including shadowing experiences and selected skills practice in health care facilities, are organized by the teacher.

Dental Assistant

Description:

Students who complete the two-year Dental Assistant program may either enter the occupation at the aide level in a dental office or continue their studies at the postsecondary level. Students learn entry-level clerical as well as clinical skills necessary to assist the dentist in the routine functions of a dental office. Introduction to Health Occupations is strongly recommended as a foundation course. The curriculum includes classroom study and supervised on-the-job occupational training. Student organization activities (HOSA) are an integral part of classroom instruction and on-the-job training and serve as an excellent method of reinforcing basic skills and knowledge and gaining leadership abilities.

The initial design of the Dental Assistant program was reviewed and accepted by the Dental Health Regulatory Board and has since been field-tested in three sites in Virginia. Results of the field tests also have been reviewed and approved by the Board. The Executive Council of the Virginia Dental Association, Dental Education and Continuing Education Committee has unanimously endorsed the program. Questions concerning design, adoption, and implementation of the program should be addressed to Specialist, Health Occupations Education, Virginia Department of Education.

CIP Code: 51.0601

Suggested Grade Level: 11, 12

Prerequisite: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:

Dental Assistant I (8328)
Dental Assistant II (8329)

Related Postsecondary Programs:

Dental Assistant (Certified)
Dental Technology
Dental Hygiene
Dentist

Dental Assistant I 8328

Grade Level: 11 (suggested) (36 weeks) Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Students in this double-period occupational preparation course learn (aide level) to assist the dentist in the following areas: cleaning equipment, laboratories, and offices; performing basic first aid; assembling and filing charts; and performing simple chairside dental procedures, including sterilizing instruments. Radiation safety practices are also included in the course of study. Teacher-supervised work education or on-the-job instruction is an inherent part of the course and is supervised by a certified dental assistant, or dentist, or possibly a hygienist and managed by the teacher.

Dental Assistant II 8329

Grade Level: 12 (suggested) (36 weeks) Prerequisites: Dental Assistant I

Students benefit from classroom study and on-the-job advanced clinical training with a dentist, certified dental assistant, dental hygienist, or dental office manager. Students learn to maintain office equipment, act as a receptionist, pour study models, trim casts, process radiographs, and assist with complex chairside procedures. Program completers can seek employment as dental aides in a dentist's office or public health dental clinic. Typewriting 6151 is a recommended elective. Four-handed dentistry and taking X-rays are taught at the postsecondary level only.

Emergency Medical Technology

Description: See course descriptions for Emergency Medical Technician-A I (8333) and Emergency Medical Technician-A II (8334).

CIP Code: 51.0904

Suggested Grade Level: 11, 12

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:
Emergency Medical Technician-A I (8333)
Emergency Medical Technician-A II (8334)

Related Postsecondary Programs:
Emergency Medical Technology (paramedic)
Physician's Assistant
Emergency Room Physician

Emergency Medical Technician-A I 8333
Emergency Medical Technician-A II 8334

Emergency Medical Technician-A I 8333

Grade Level: 11 (suggested) (36 weeks) Prerequisites: None--Introduction to Health Occupations is strongly recommended.

In this double-period occupational preparation course, students focus on the role and responsibilities of emergency rescue workers, basic medical terminology, and health care skills that include first aid; cardiopulmonary resuscitation; aseptic technique; and related anatomy, physiology, and disease knowledge. Supervised work education is given in a hospital or with rescue squads and managed by the HOE teacher.

Emergency Medical Technician-A II 8334

Grade Level: 12 (suggested) (36 weeks) Prerequisites: Emergency Medical Technician-A I

Students in this double-period occupational preparation course become skilled in identifying and dealing with emergencies such as bleeding, fractures, airway obstruction, and cardiac arrest. Instruction emphasizes proper care and use of common emergency equipment and safe methods for lifting, moving, and transporting injured persons. Supervised on-the-job training and patient-care experiences are part of the instructional program. Program completers may take the state certification examination administered by the State Department of Health.

Health Careers Cluster

Description: This program is currently under development. The curriculum is being revised and updated in collaboration with industry, various Virginia and national health-related associations, and the health regulatory boards.

CIP Code: 51.2601

Suggested Grade Level: 11, 12

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:
Health Assistant I (8331)
Health Assistant II (8332)

Related Postsecondary Programs:
Medical Laboratory Technology
Medical Records
Advanced Nursing (registered nurse)
Advanced Emergency Medical Technology (paramedic)
Respiratory Therapy Technician
Radiologist
Certified Dental Assistant
Dentist
Occupational Therapist
Registered Physical Therapist
Physician
Optician
Veterinarian

Refer to the *Allied Health Education Directory*, 12th edition. All occupations accredited by the American Medical Association (AMA) Committee on Allied Health Education and Accreditation (CAHEA) are listed in this publication.

Health Assistant I 8331

Grade Level: 11 (suggested) (36 weeks)

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

In this double-period occupational preparation course, students explore careers in the allied health field by developing basic skills common to several assisting careers. They study body structure and function, principles of health, microbes and disease, and an overview

of the national health and patient care system. Supervised work education or on-the-job training may begin as part of the course in hospitals, nursing homes, or public health agencies and is managed by the HOE teacher.

Health Assistant II 8332

Grade Level: 12 (suggested) (36 weeks) Prerequisites: Health Assistant I

Students in this triple-period course choose advanced preparation in one of the four tracks--dental, allied health, medical, and nursing--for further classroom instruction and clinical practice. Course content is based on validated competencies for a specific worker such as dental aide, medical assistant, physical therapy aide, or respiratory therapy assistant. Students achieve advanced skills in assisting with therapeutic and emergency measures, assisting therapists with patient rehabilitation, assisting with care of the elderly, preparing the patient for examination, and performing simple laboratory procedures and health tests. Each student, depending on his or her choice, may be prepared to assist physicians, dentists, nurses, and/or therapists in hospitals, nursing homes, clinics, and public health facilities in such jobs as orderly, sterile supply aide, and physical therapy aide. Successful completion may lead to employment in areas such as certified nursing assistant, dental aide, and respiratory therapy assistant.

Home Health Aide

Description:

Home Health Aide is designed as an "occupational mix" program that provides for entry-level skills within the health-related field. It provides students with the knowledge, understanding, and basic skill training necessary for entering advanced health occupations programs or locating entry-level employment as a certified nurse's aide/home health aide in a hospital, nursing home, home for adults, private home, or other health care setting.

To ensure maximum skills and employment opportunities, the curriculum is designed to be taught by both the Health Occupations instructor and the Work and Family Studies teacher. Access to a clinical training facility is essential.

Home Health Aide may be offered as a three-hour block senior intensified program or may (local option) be scheduled as a two-year, two-hour block at the 11th and 12th grades.

CIP Code: 51.1615

Suggested Grade Level: 11, 12

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:

Health Assistant I (8331)
Health Assistant II (8332)

Related Postsecondary Programs:

Licensed Practical Nurse
Registered Nurse
Graduates of the program may seek preparation in another health care worker area or specialty.

Health Occupations Cooperative Education

Description: Health Occupations Cooperative Education is designed to prepare students with basic skills for employment in nursing homes, clinics, medical and dental offices, hospitals, and certain public health settings. The occupational preparation programs provide knowledge for career choice and immediate employment in the health field.

CIP Code: 51.0899

Suggested Grade Level: 11, 12

Prerequisite: None

Approved Courses:
Health Occupations Cooperative Education I (8395)
Health Occupations Cooperative Education II (8396)

Related Postsecondary Programs:
Surgical Technologist
Associate Degree in Nursing
Dental Assisting

Health Occupations Cooperative Education I (8395)

Grade Level: 11 (18/36 weeks) Prerequisites: None

HOCE is a cooperative work experience program that combines classroom instruction with two or three hours of school-released time for on-the-job training in a health care setting. A two-credit course requires 180 hours of cooperative work experience. The program prepares students for occupations in one or more health careers.

Health Occupations Cooperative Education II (8396)

Grade Level: 12 (36 weeks) Prerequisites: None

HOCE is a cooperative work experience program that combines classroom instruction with two or three hours of school-released time for on-the-job training in a health care setting. A two-credit course requires 360 hours per year or a senior intensified course. A three-credit course requires 540 hours per year. The program trains students for occupations requiring knowledge and skills in one or more health careers.

Medical Assistant

Description: Medical Assistant is a two-year instructional program that prepares students to assist a physician by performing functions related to both business administration and clinical duties of a medical office. Business aspects of instruction cover insurance, accounts, reports, medical records, and medical transcription. Clinical aspects of study include preparation of the patient for examination, assessment of vital signs, assistance with medical examination and treatment, routine laboratory procedures, and use of the electrocardiograph machine. Essential elements and guidelines for a nationally accredited education program are available from the American Medical Association (AMA). This occupational program may be reviewed and accredited by the AMA Committee on Allied Health Education and Accreditation (CAHEA).

CIP Code: 51.0801

Suggested Grade Level: 11, 12

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:
Medical Assistant I (8345)
Medical Assistant II (8346)

Related Postsecondary Programs:
Advanced Medical Assisting
Medical Laboratory Technology
Physician's Assistant
Medical Office Secretary

Medical Assistant I (8345)
Medical Assistant II (8346)

Medical Assistant I 8345

Grade Level: 11 (suggested) (36 weeks)

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Students in this double-period occupational preparation course learn body structure and function, principles of health, and microbes and disease. They develop basic skills and techniques to assist the physician in the following areas: receptionist duties, assistance with patient examinations, cardiopulmonary resuscitation, and performance of simple laboratory tests. On-the-job clinical instruction may occur in physicians' offices or clinics and is coordinated by the health occupations teacher.

Medical Assistant II 8346

Grade Level: 12 (suggested) (36 weeks) Prerequisites: Medical Assistant I

In this triple-period occupational preparation course, students further develop medical assisting skills and techniques learned in Medical Assistant I. They also learn medical economics; assembly and maintenance of patient records; care of equipment; special diagnostic testing such as EKG, visual, and audio testing machines; and assistance with office therapy. Advanced on-the-job clinical experience in physicians' offices or clinics is a part of the course. Successful completion of the program leads to employment in physicians' offices or clinics. Keyboarding is recommended.

Nurse's Assistant

Description:

The competency-based Nurse's Assistant program is designed to provide students with the knowledge, understanding, and basic skill training necessary for entering advanced health occupations programs or locating entry-level employment as a certified nursing assistant in a hospital, licensed nursing home, private residence, or other health care setting. Introduction to Health Occupations is strongly recommended as a prerequisite for this one- or two-year program. Supervised occupational experience is an integral part of the course, and clinical practice in a licensed nursing home is required and is coordinated by the instructor. Student organization activities (HOSA) are an outgrowth of classroom instruction and on-the-job training and serve as an excellent method of reinforcing basic skills and knowledge and gaining leadership abilities.

The program may be taught in one year if courses I and II are combined in a three-hour block in a senior intensified program and all competencies are addressed. Access to a clinical training facility is essential as well as time to dress in uniform, to be transported, and to practice with patients. Upon successful completion of the program, the student is eligible to take the certification exam. Virginia State Health Department Nursing Home Licensure regulations and the Virginia Board of Nursing regulations are applicable to this program.

CIP Code: 51.1614

Suggested Grade Level: 11, 12

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:

Nursing Assistant I (8360)
Nursing Assistant II (8362)

Related Postsecondary Programs:

Licensed Practical Nurse
Registered Nurse
Graduates of the program may seek preparation in another health care worker area of specialty.

Nursing Assistant I 8360

Grade Level: 11 or 12 (36 weeks)

Prequisites: None--Introduction to Health Occupations is strongly recommended.

Nursing Assistant I, offered as a single-, double-, or triple-period occupational preparation course at the eleventh-grade level, emphasizes the study of nursing occupations as related to the health care system. Students study normal growth and development, simple body structure and function, and medical terminology and are introduced to microbes and disease. They receive elementary skill training in patient-nurse's assistant relationships; taking and recording vital signs; cardiopulmonary resuscitation; and bathing, feeding, dressing, and transporting patients in hospitals and nursing homes. Limited on-the-job instruction in nursing homes and hospitals is part of the course. This course can be used as an introduction to practical nursing or to prepare the student for Nursing Assistant II so that all competencies for a certified nursing assistant are met.

Nursing Assistant II 8362

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: Nursing Assistant I

Nursing Assistant II is a double- or triple-period occupational preparation course, emphasizing advanced skill training in areas such as catheter care, recording intake and output, admission and discharge procedures, range of motion, bowel and bladder training, care of the dying, and selected procedures for maternal and infant care. In addition, students learn diseases and body systems as related to advanced clinical care of the acute medical-surgical patient, the chronically ill, and the elderly. On-the-job instruction in a licensed nursing home is part of the course. Upon completion of the nurse's assistant program, the student is eligible to take the nursing assistant certification exam that leads to employment as a certified nursing assistant in hospitals and nursing homes.

Veterinary Assistant

Description: Veterinary Assistant is a one-, two-, or three-year, one- or two-period occupational preparatory class that combines lecture and laboratory. Instruction includes information and skill training necessary for employment in a veterinary hospital, pet store, kennel, or research laboratory as an assistant who attends to the needs of animals.

CIP Code: 51.0808

Suggested Grade Level: 10, 12

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:
Veterinary Assistant I (8310)
Veterinary Assistant II (8311)
Veterinary Assistant III (8312)

Related Postsecondary Programs:
Animal Health Technician
Veterinary Anesthesiology
Veterinary Medicine
Veterinary Surgery

Veterinary Assistant Level I 8310

Grade Level: 10-12 (36 weeks)

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Veterinary Assistant I may be offered as a double- or triple-period occupational preparation course beginning at the tenth-grade level. Students learn animal science and the care of animals, including animal structure and function, principles of health, and microbes and disease. They develop basic skills and techniques of assisting the veterinarian in the following areas: receptionist duties; animal examinations; examining room and laboratory work; the handling, caring, and feeding of animals; first aid and surgery; and maintenance of equipment and facilities. On-the-job clinical instruction may occur in veterinary offices or animal clinics and is coordinated by the health occupations teacher.

Veterinary Assistant Level II 8311

Grade Level: 11-12 (36 weeks) Prerequisites: Veterinary Assistant (Level I)

Veterinary Assistant II may be offered as a double- or triple-period occupational preparation course for students who choose advanced preparation in veterinary assisting. The student may incorporate a cooperative work experience that combines classroom instruction with two or three hours of school-released time for on-the-job training in a health care facility such as a veterinarian's office or clinic.

Practical Nursing

Description: The Practical Nursing program prepares students with the skills and knowledge to become Licensed Practical Nurses. Upon successful completion of the program, students qualify to take the Virginia practical nurse licensing examination. Two types of Practical Nursing programs are offered.

1. The high school extended program is open to high school seniors and adults. This three-hour block program runs eighteen months.

2. The adult program is a one-year, post-high school program offered on a full-day basis.

The program also must meet certain Virginia Board of Nursing regulations. Student organization activities (HOSA) are an outgrowth of classroom instruction and clinical practice and serve as an excellent method of reinforcing basic skills and gaining leadership abilities.

CIP Code: 51.1613

Suggested Grade Level: 12, 13 (Adult)

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Approved Courses:
Practical Nursing I (8357)
Practical Nursing II (8358) Adult only

Related Postsecondary Programs:
Registered Nurse
Family Nurse Practitioner

Practical Nursing I 8357

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: None--Introduction to Health Occupations is strongly recommended.

Students enrolled in this triple-period occupational preparation course learn nursing care of patients of all ages, in various stages of sickness or wellness, and with a variety of disease conditions. They focus on human anatomy, body function, communication, community health, introduction to fundamental nursing skills, nutrition, drug therapy, and elementary medical-surgical nursing.

Practical Nursing II 8358

Grade Level: Adult, 13 (36 weeks) Prerequisites: Practical Nursing I

Practical Nursing II is an all-day, 36-week occupational preparation course offered to Practical Nursing I completers only. Classroom and clinical training are given in approved hospitals, licensed nursing homes, or home care settings under the direction of a nurse educator. Instruction emphasizes administration of medicines, advanced and complex patient care, and practice with patients of all ages. In addition, students learn advanced anatomy, physiology, and human behavior as they relate to health and disease, including mental illness. Upon successful completion of the total program, students qualify to take the practical nurse licensing examination.

Surgical Technology

Description: See course descriptions. Essential elements and guidelines for nationally accredited educational programs are available from the American Medical Association (AMA). This occupational program may be reviewed and accredited by the AMA Committee on Allied Health Education and Accreditation (CAHEA).

CIP Code: 51.0909

Suggested Grade Level: 12, 13 (Adult)

Prerequisites: None--Introduction to Health Occupations or Nursing Assistant I is recommended.

Approved Courses: Surgical Technologist I (8351)
Surgical Technologist II (8352)

Related Postsecondary Programs: Surgical Technology is an articulated program, with the second year of classroom and clinical training offered on the adult or postsecondary level. Graduates of the program may seek advanced preparation in nursing or another health care specialty.

Surgical Technologist I 8351

Grade Level: 12 (36 weeks)

Prerequisites: None--Introduction to Health Occupations and/or Nursing Assistant I is recommended.

Students in this triple-period occupational preparation course acquire knowledge and assisting skills to function in association with licensed nurses and surgeons/physicians, providing the best possible care of the surgical patient. Instruction emphasizes human anatomy, medical terminology, cleanliness, asepsis, safety, and efficiency in the operating room.

Surgical Technologist II 8352

Grade Level: Adult, 13 (suggested) (4 months)

Prerequisites: Surgical Technician I

Surgical Technologist II is a full-time, eight-hour-per-day course offered to students who have successfully completed Surgical Technologist I. Classroom and clinical training are given in selected approved hospitals under the direction of a nurse educator. Students learn operating room procedures and aseptic surgical techniques, including preparation and handling of materials and surgical instruments at the operating table. Upon successful completion of the program, students qualify to take the national certification examination.

Health Occupations Education Approved Program Completer Options

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Dental Assistant Dental Assistant I (8328) Dental Assistant II (8329)	Two 36-week courses or 36-week intensified occupational course*	Two courses
Emergency Medical Technology Emergency Medical Technician-A I (8333) Emergency Medical Technician-A II (8334)	Two 36-week courses or 36-week intensified occupational course*	Two courses
Health Careers Cluster Health Assistant I (8331) Health Assistant II (8332)	Two 36-week courses or 36-week intensified occupational course*	Two courses
Health Occupations Cooperative Education Health Occupations Cooperative Education I (8395) Health Occupations Cooperative Education II (8396)	36-week occupational course*	36-week occupational course*
Medical Assistant Medical Assistant I (8345) Medical Assistant II (8346)	Two 36-week courses or 36-week intensified occupational course*	Two courses
Nurse's Assistant Nursing Assistant I (8360) Nursing Assistant II (8362)	Two 36-week courses or 36-week intensified occupational course*	Two courses

*An occupational course is defined as 2-3 hour block for 2-3 Carnegie units.

Health Occupations Education
Approved Program Completer Options
(continued)

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Practical Nursing Practical Nursing I (8357) Practical Nursing II (Adult) (8358)	Two 36-week courses	Two 36-week courses
Surgical Technology Surgical Technologist I Surgical Technologist II (Adult)	36-week occupational course*	Two 36-week courses*
Veterinary Assistant Veterinary Assistant I (8310) Veterinary Assistant II (8311) Veterinary Assistant III (8312)	Two 36-week courses*	Two courses
Occupational Mix Home Health Aide (8364)	36-week intensified occupational course*	36-week intensified occupational course*
Special Programs Health Occupations for the Disadvantaged I (8361) Health Occupations for the Disadvantaged II (8363) Health Occupations for the Disabled I (8381) Health Occupations for the Disabled II (8382)	Two 36-week courses or 36-week senior intensified course	Two 36-week courses or One 36-week course in the related intensified course

*An occupational course is defined as a 2-3 hour block for 2-3 Carnegie units.

Overview
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Program &Course Descriptions
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Program Completer Options
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Marketing Education in Virginia

Overview

Marketing Education prepares students for careers in the marketing of goods or services:

- the buying, transport, and storage of goods
- promotion of goods and services
- marketing research
- marketing management.

Through classroom instruction and supervised on-the-job training, Marketing Education enables students to develop competencies for entry into full-time employment or into advanced educational or training programs.

The cooperative method of instruction inherent in Marketing Education programs requires the joint interest and efforts of the school, local marketing businesses, and the community. In cooperative programs, school activities and work experiences are components of the total competency-based learning package designed by the teacher-coordinator, who implements the classroom instruction and, along with a supervisor at work, also coordinates each student's on-the-job training. On-the-job training may take place either during part of the school day or outside regular school hours, ensuring maximum scheduling flexibility for students.

In addition to cooperative programs, Marketing Education offers occupational experiences that focus on simulated activities of marketing businesses that are replicated in the classroom, school or community projects, or periodic employment in local marketing businesses. These occupational experiences may also take place during or in addition to the regular school day. Apprenticeship opportunities also are being developed.

Students may concentrate all of their courses in the General Marketing Program or in one specialized area, or they may choose to combine courses for both. Fundamentals of Marketing or Introduction to Marketing is not a prerequisite for upper level competency development; however, either course is strongly recommended to students for basic skill development and as a basis for identifying an occupational interest within the marketing field.

Student Organization
DECA: An Association of Marketing Students

The co-curricular student organization, DECA: An Association of Marketing Students, is designed to complement, supplement, and strengthen the marketing education curriculum and instructional program. Through participation in local, state, and national activities, DECA members develop a better understanding of the business world, become conscious

of their civic obligations, and develop social poise and leadership ability. The DECA program of work includes activities related to classwork and participation in community projects, district meetings, and competitive events.

Substitution for High School Science, Mathematics, and Practical Arts Credits

- Completion of the combination of any two credits in marketing education qualifies as an alternative for one credit in mathematics for a 21-unit diploma, if approved by the local school division.

- Completion of any one-year course in the marketing education program qualifies for a practical arts credit.

On-the-Job Training

Marketing Education students enrolled in cooperative programs or in courses using the occupational experiences method may receive the required on-the-job training at times other than during the school day, such as afternoons, evenings, or weekends, provided the program coordinator is able to maintain a flexible schedule to conduct coordination during these times.

Accessibility to Marketing Education

School divisions may also want to consider the following alternatives as ways to provide students greater accessibility to Marketing Education:

- Offer a two-year Marketing Education program only, consisting of Fundamentals of Marketing (8110) or Introduction to Marketing (8111) in the 11th grade and Marketing (8120) in the 12th grade, or Marketing (8120) in the 11th grade and Advanced Marketing (8130) in the 12th grade.

- Enable over-age 9th grade students to enroll in Fundamentals of Marketing (8110) and enter a Marketing Education cooperative program in the 11th or 12th grade.

- Enable students to shift their required credits to the 11th and 12th grade in order to enroll in Marketing Education courses in the 9th and 10th grade.

- Based on student interest and labor market needs, offer specialized Marketing Education options such as entrepreneurship, marketing management, hotel-motel operations, and travel-tourism marketing.

Course Requirements

Student requirements for many Marketing Education courses vary depending on whether the course uses the cooperative education method or the occupational experiences method.

- **Cooperative Education:** In courses using the cooperative education method (identified as "co-op" in the course descriptions), students receive a combination of classroom instruction and a minimum of 540 hours of continual supervised on-the-job training throughout the school year. This training, which takes place in an appropriate local marketing business, is planned, supervised, and documented by the marketing education teacher-coordinator. Students work an average of 15 hours per week for 36 weeks. On-the-job training that takes place in the summer months may be counted toward the 540 hours, if documented by a training plan and supervised by the marketing teacher-coordinator.

- **Occupational Experiences:** In courses using the occupational experiences method (identified as "oe" in the course descriptions), students combine classroom instruction with a minimum of 360 hours of occupational experiences consisting of simulations, school and community-based projects, or periodic employment in appropriate local marketing businesses, all of which are planned, supervised, and documented by the marketing education teacher-coordinator. Occupational experiences during the summer months may be counted toward the 360 hours, if supervised by the teacher-coordinator.

- **Laboratory Approach:** In certain courses (currently applicable only to Hotel/Motel Marketing, Advanced Hotel/Motel Marketing, Travel and Tourism Marketing, and Advanced Travel and Tourism Marketing), the occupational experiences method is conducted using the laboratory approach. Students combine a minimum of 360 hours of intensive classroom instruction and occupational experiences in daily blocks of instruction that are planned, supervised, and documented by the marketing education teacher-coordinator.

Marketing Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
General Marketing Program*				
Fundamentals of Marketing	8110	10	36	
or Introduction to Marketing	8111	10	18	
Marketing	8120**/8121	11	36	20
Advanced Marketing	8130**/8131	12	36	20
Executive Marketing Program*				
Planning for Entrepreneurship	8190	12	36	
International Marketing	8135	12	36	
Marketing Management	8132	12	36	
Specialized Marketing Programs				
Apparel and Accessories Marketing* (Specialized Program)				
Fashion Marketing	8140**/8141	11	36	20
Advanced Fashion Marketing	8145**/8146	12	36	20
Hospitality and Recreation Marketing* (Specialized Program)				
Hotel-Motel Marketing	8160**/8161	11	36	20
Advanced Hotel-Motel Marketing	8162**/8163	12	36	20
Restaurant Marketing	8170**	11	36	20
Sports, Entertainment, and Recreation Marketing	8175**/8176	11	36	20
Food Marketing* (Specialized Program)				
Food Marketing	8150**	11	36	20

*Approved program

**Cooperative instruction combines classwork and on-the-job training.

Note 1: Advanced Marketing (8130/8131) may be substituted for any of the advanced specialized courses. After careful consideration of student interest, career goals, and plans for postsecondary study, one of the Executive Marketing courses may be substituted for an advanced course in the General or Specialized Marketing programs.

Note 2: New course options and school-to-work transition opportunities coordinated by the Marketing Leadership Council are planned for 1995-96. The Council will address program structure, curriculum, professional development, guidance and program promotion, and communication with teacher-coordinators.

Note 3: The categories of Hospitality and Recreation Marketing and Tourism and Travel Services Marketing will be combined in the restructured curriculum.

Marketing Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Specialized Marketing Programs (continued)				
Financial Services Marketing* (Specialized Program)				
Financial Services Marketing	8180**/8181	11	36	20
Tourism and Travel Services Marketing* (Specialized Program)				
Travel and Tourism Marketing	8165**8166	11	36	20
Advanced Travel and Tourism Marketing	8167**/8168	12	36	20
Real Estate Marketing (Specialized Program)				
Real Estate Marketing	8191	12	36	
Senior Intensified Program				
Retail Selling	8122	12	18	
Checker Education	8151	12	18	

*Approved program

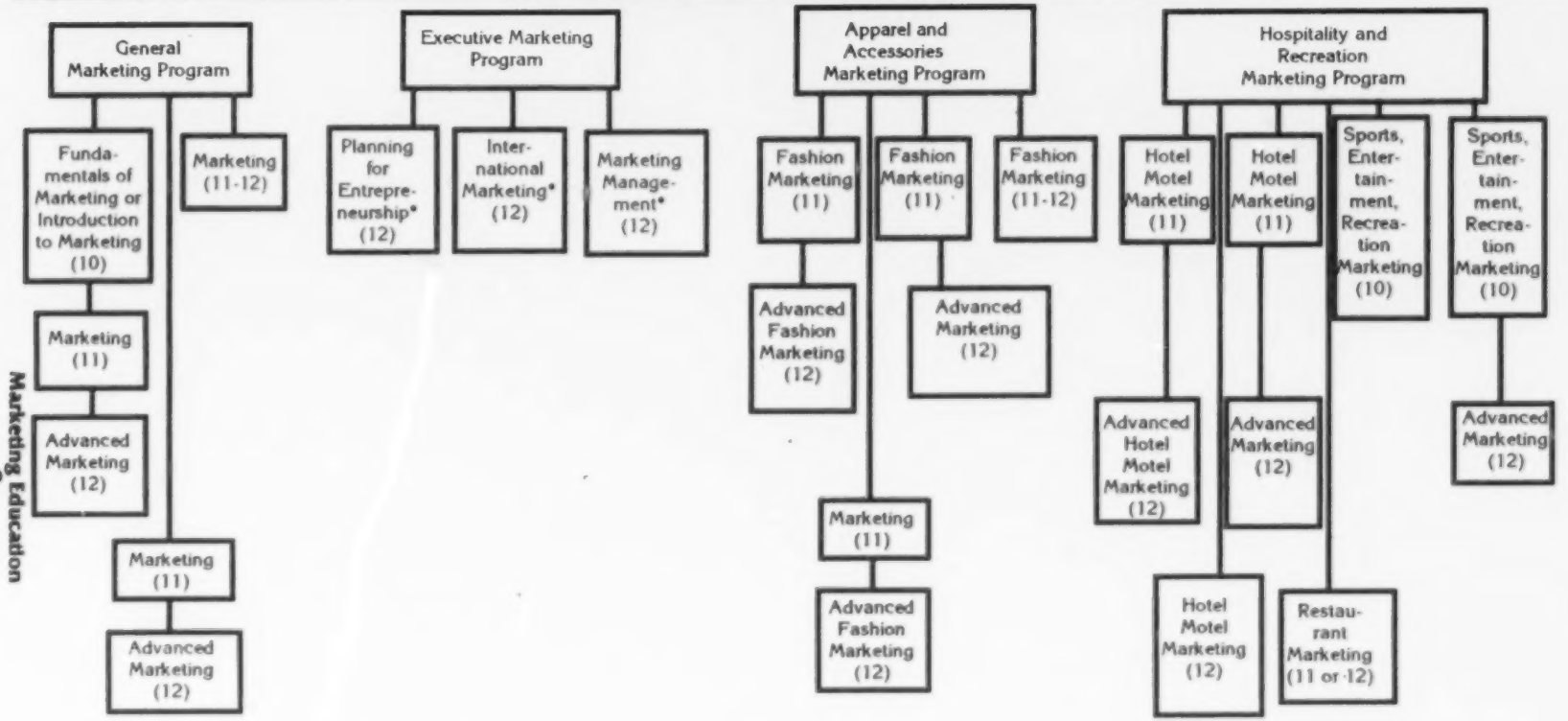
**Cooperative instruction combines classwork and on-the-job training.

Note 1: Advanced Marketing (8130/8131) may be substituted for any of the advanced specialized courses. After careful consideration of student interest, career goals, and plans for postsecondary study, one of the Executive Marketing courses may be substituted for an advanced course in the General or Specialized Marketing programs.

Note 2: New course options and school-to-work transition opportunities coordinated by the Marketing Leadership Council are planned for 1995-96. The Council will address program structure, curriculum, professional development, guidance and program promotion, and communication with teacher-coordinators.

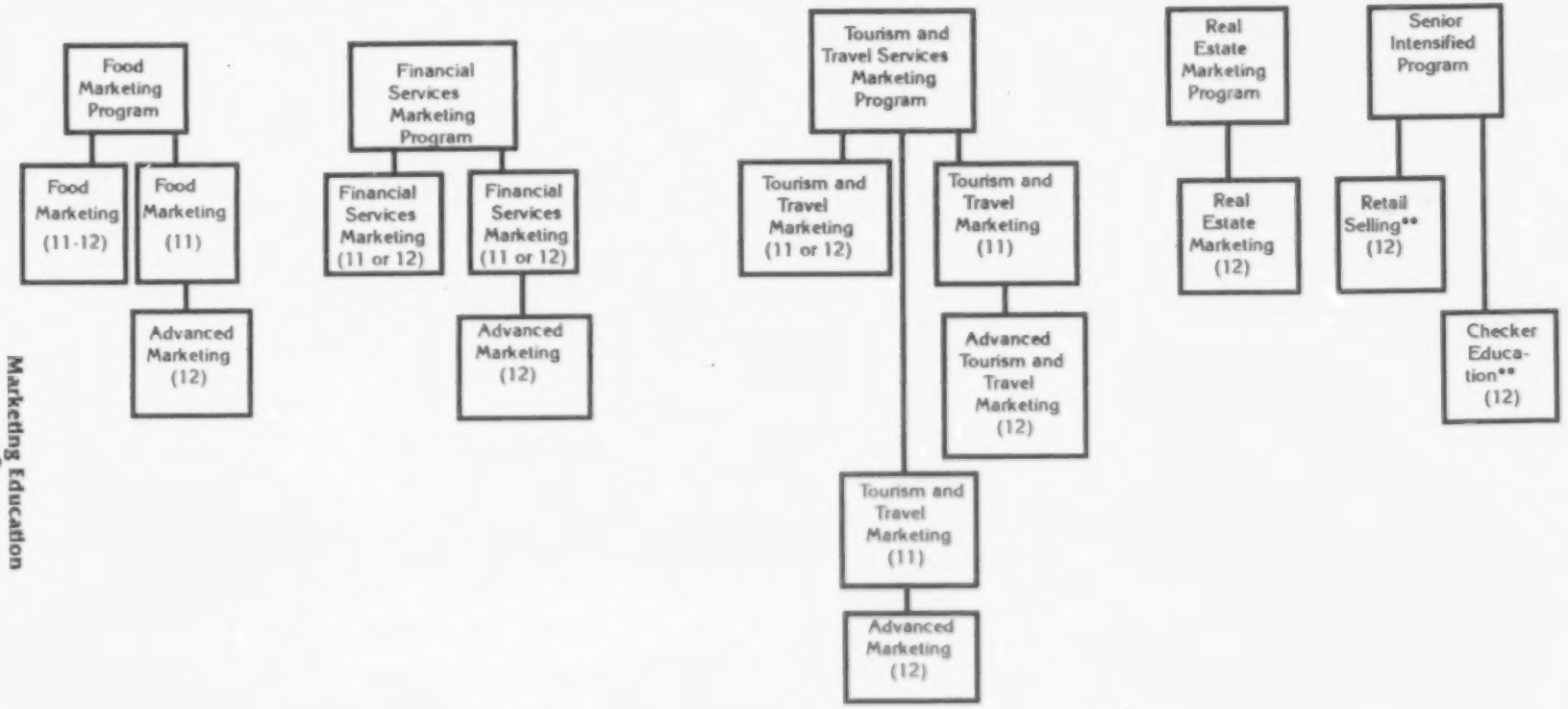
Note 3: The categories of Hospitality and Recreation Marketing and Tourism and Travel Services Marketing will be combined in the restructured curriculum.

Marketing Education
Recommended Program Sequence



* Completion of one of these courses does not constitute a vocational completer. Completer status may be achieved if a student completes two of these courses or one of these courses as an enhancement to other marketing education courses in other vocational education services.

Marketing Education
Recommended Program Sequence


Food Marketing Program
Food Marketing (11-12)
Food Marketing (11)
Advanced Marketing (12)
Financial Services Marketing Program
Financial Services Marketing (11 or 12)
Financial Services Marketing (11 or 12)
Advanced Marketing (12)
Tourism and Travel Services Marketing Program
Tourism and Travel Marketing (11 or 12)
Tourism and Travel Marketing (11)
Advanced Tourism and Travel Marketing (12)
Tourism and Travel Marketing (11)
Advanced Marketing (12)
Real Estate Marketing Program
Real Estate Marketing (12)
Senior Intensified Program
Retail Selling** (12)
Checker Education** (12)

** Completion of these one-semester courses does not constitute a vocational completer.

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General Marketing Program

Description: The general marketing program is offered for students who have identified an occupational interest in wholesale, retail, or service marketing occupations. Upon completion, students are ready for entry into full-time employment in marketing or into advanced educational or training programs.

CIP Code: 08.000

Suggested Grade Level: 10-12

Prerequisites: None

Approved Courses:
Fundamentals of Marketing (8110) or Introduction to Marketing (8111)
Marketing (8120--co-op) or (8121)
Advanced Marketing (8130--co-op) or (8131)

Related Postsecondary Programs:
Marketing
Marketing Education
Merchandising

Fundamentals of Marketing 8110

Grade Level: 10 or 11 (suggested) (36 weeks) Prerequisites: Verified interest in marketing occupations

Fundamentals of Marketing is the basic elective course offered in the three-year marketing education program. Students achieve a basic understanding of marketing and its importance, and develop fundamental social, economic, mathematical, marketing, job search, and occupational decision-making competencies necessary for successful initial employment in retail, wholesale, or service businesses.

Students receive classroom instruction and a minimum of 90 hours of occupational experiences, consisting of simulations, school and community-based projects, or periodic employment in local marketing businesses. These occupational experiences may take place during or after school hours, and are planned, directed, and documented by the marketing education teacher-coordinator. The competencies developed in this course are important for successful completion of the other marketing education occupational courses.

Introduction to Marketing 8111

Grade Level: 10 or 11 (suggested) (18 weeks) Prerequisites: Verified interest in marketing occupations

In this course, an abridgment of the year-long Fundamentals of Marketing course, students gain basic knowledge about marketing and its importance and basic skills important for entry-level marketing employment.

Students receive classroom instruction and a minimum of 45 hours of occupational experience consisting of simulations, school and community-based projects, or periodic employment in local marketing businesses. These occupational experiences may take place during or after school hours, and are planned, directed, and documented by the marketing education teacher-coordinator. The competencies gained in this course will contribute to the successful completion of upper-level marketing education occupational courses.

Marketing 8120 (co-op)
Marketing 8121 (oe)

Grade Level: 11 or 12 (suggested) (36 weeks) Prerequisites: None

Students learn the functions involved in the marketing of goods and services and achieve the competencies necessary for successful marketing employment. The development of social and economic competencies in conjunction with marketing competencies in the areas of personal selling, advertising, visual merchandising, physical distribution, purchasing, market planning, product/service technology, and marketing mathematics enable students to become well-rounded marketing employees who contribute to the success of marketing businesses.

Advanced Marketing 8130 (co-op)
Advanced Marketing 8131 (oe)

Grade Level: 12 (suggested) (36 weeks) Prerequisites: Marketing 8120 or 8121

In the third-year course in the General Marketing program, students gain (a) in-depth knowledge of the marketing functions and the supervisory and management responsibilities for those functions and (b) competencies important for successful supervisory management employment and advancement to other management positions. Students develop economic and advanced marketing competencies in professional selling, marketing planning, marketing mathematics, purchasing, physical distribution, advertising, and visual merchandising, as well as social competencies related to the supervision of marketing employees.

Executive Marketing Program

Description: The courses in the Executive Marketing Program are designed for the high school senior who plans to study marketing, business, or management at the postsecondary level; who plans to manage or own a business; or who is interested in international trade and the global economy. Emphasis is given to developing a knowledge base that can be expanded through postsecondary study and field experience. International Marketing, Marketing Management, or Planning for Entrepreneurship may be selected to enhance other programs of study.

CIP Code:
52.1403 (International Marketing)
52.1401 (Marketing Management)
08.0301 (Planning for Entrepreneurship)

Suggested Grade Level: 12

Prerequisites: None

Approved Courses:
International Marketing (8135)
Marketing Management (8132)
Planning for Entrepreneurship (8190)

Related Postsecondary Courses:
Business Management
Marketing

International Marketing 8135

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: None (It is recommended that students be enrolled in a foreign language course either concurrently or prior to enrolling in this course).

International Marketing is a specialized course for students with a career interest in the field of international trade. Students gain an understanding of the various careers in international trade, finance, shipping, and marketing and consider fundamental concepts, principles, and theories of marketing in an international setting. Course content blends macro and micro economic theory with international culture, concepts, practices, and application.

Students combine classroom instruction with a minimum of 360 hours of occupational experiences consisting of simulations, school and community-based projects, or periodic employment in international trade related businesses, all of which are planned, supervised, and documented by the marketing education teacher-coordinator. Occupational experiences during the summer months also may be counted toward the 360 hours if supervised by the teacher-coordinator. Domestic and foreign internships may be available to provide students with additional opportunities for "hands-on" experiences in international marketing.

Marketing Management 8132 (oe)

Grade Level: 12 (suggested) (36 weeks) Prerequisites: None

High school seniors who either plan to attend college with a concentration in marketing, business, or management and/or who have tentative plans to manage or own a business will benefit from this course. Students develop critical thinking and decision-making skills through the application of marketing principles to (a) small and large businesses, (b) nonprofit organizations, (c) the professions, (d) service industries, and (e) other institutions or associations that market products, services, ideas, causes, or people.

Planning for Entrepreneurship 8190 (oe)

Grade Level: 12 (suggested) Prerequisites: None

Students interested in owning their own marketing business gain an understanding of the rewards and responsibilities of owning a business and receive guidance in planning for small business ownership. Students develop competencies related to the identification of business opportunities, the development of a marketing strategy, financial planning, and the development of a management plan.

Apparel and Accessories Marketing (Specialized Program)

Description: This specialized marketing education program is offered for students who have identified an occupational interest in the wholesale or retail marketing of men's, women's, and/or children's clothing and related items for personal wear or adornment. Emphasis is given to fashion purchasing and selling, fashion cycles, fashion coordination, and sales promotion.

CIP Code: 08.0101

Suggested Grade Level: 11-12

Prerequisites: None

Approved Courses:
Marketing (8120--co-op) or (8121) (see page 12)
Fashion Marketing (8140--co-op) or (8141)
Advanced Fashion Marketing (8145--co-op) or (8146)
Advanced Marketing (8130--co-op) or (8131) (see page 12)

Related Postsecondary Courses:
Fashion Design
Marketing
Merchandising

Fashion Marketing 8140 (co-op)
Fashion Marketing 8141 (oe)

Grade Level: 11 or 12 (suggested) (36 weeks) Prerequisites: None

In this specialized course, students gain basic knowledge of the apparel and accessories industry and competencies necessary for successful employment in apparel businesses. In the course, students develop (a) general marketing competencies necessary for successful employment in fashion merchandising, (b) general marketing competencies applied to the apparel and accessories industry, and (c) specialized competencies unique to fashion merchandising. Social and economic competencies are included as well as the areas of personal selling, sales promotion, purchasing, physical distribution, market planning, product/service technology, and marketing mathematics.

Advanced Fashion Marketing 8145 (co-op)
Advanced Fashion Marketing 8146 (oe)

Grade Level: 12 (36 weeks)

Prerequisites: Marketing (8120/8121) or Fashion Marketing (8140/8141)

Students with a career interest in apparel and accessories marketing gain in-depth knowledge of the apparel and accessories industry and competencies important for supervisory-management employment in apparel businesses. They develop advanced competencies unique to fashion merchandising and advanced general marketing competencies applied to the apparel and accessories industry. These include professional selling, sales promotion, buying, merchandising, marketing research, product/service technology, marketing mathematics, and supervision.

Hospitality and Recreation Marketing (Specialized Program)

Description: This specialized marketing education program is designed for students with a designated occupational interest in the hospitality industry specialties of hotel/motel or restaurant management or sports, entertainment, and recreation marketing. Students gain an understanding of the hospitality and recreation industry and career options available. They learn management methods and techniques related to purchasing, sales promotion, personnel and consumer management, and licensing requirements.

CIP Codes:
08.0902 (Hotel/Motel Marketing)
52.0902 (Hotel/Motel Management)
08.0906 (Restaurant Marketing)
08.0999 (Sports, Entertainment, and Recreation Marketing)

Suggested Grade Level: 11-12

Prerequisites: None

Approved Courses:
Hotel/Motel Marketing (8160--co-op) or (8161)
Advanced Hotel/Motel Marketing (8162--co-op) or (8163)
Restaurant Marketing (8170--co-op)
Sports, Entertainment, and Recreation Marketing (8175--co-op) or (8176)
Advanced Marketing (8130--co-op) or (8131) (see page 12)

Related Postsecondary Program:
Hotel/Motel Management
Food Service Management
Sports Marketing
Sports Communications
Recreation

Hotel/Motel Marketing 8160 (co-op)
Hotel/Motel Marketing 8161 (oe)

Grade Level: 11 or 12 (36 weeks) Prerequisites: None

In this specialized course, students with a career interest in the field of hospitality and recreation develop competencies in the areas of hotel front office procedures, human relations, food and beverage service, purchasing, tourism, travel, and sales promotion. In addition, students obtain a thorough understanding of the hotel-motel industry and the career options available.

Students enrolled in the co-op course (8160) combine a maximum of 360 hours of intensive classroom instruction and occupational experiences in daily blocks of instruction which are planned, supervised, and documented by the marketing education teacher-coordinator. In addition, students receive 540 hours of supervised on-the-job training throughout the school year.

Advanced Hotel/Motel Marketing 8162 (co-op)
Advanced Hotel/Motel Marketing 8163 (oe)

Grade Level: 12 (36 weeks)

Prerequisites: Hotel/Motel Marketing 8160/8161

Students gain in-depth knowledge of the marketing functions within the hotel-motel industry and the management responsibilities for those functions. They develop advanced competencies in the area(s) of hotel-motel operation in which they choose to specialize.

Students enrolled in the co-op course (8162) combine a maximum of 360 hours of intensive classroom instruction and occupational experiences in daily blocks of instruction which are planned, supervised, and documented by the marketing education teacher-coordinator. In addition, students receive 540 hours of supervised on-the-job training throughout the school year.

Restaurant Marketing 8170 (co-op)

Grade Level: 11 or 12 (suggested) (36 weeks)

Prerequisites: None

Restaurant Marketing is a specialized course for students with a career interest in the food service marketing industry. Students gain an understanding of the restaurant marketing industry and competencies necessary for successful employment in this industry.

Sports, Entertainment, and Recreation Marketing 8175 (co-op)
Sports, Entertainment, and Recreation Marketing 8176 (oe)

Grade Level: 11 or 12 (36 weeks)

Prerequisites: None

Students develop competencies in the areas of marketing analysis, event marketing, communication, and human relations, along with a thorough understanding of the sports, entertainment, and recreation industry and the career options available.

Food Marketing (Specialized Program)

Description: This specialized marketing program prepares students to perform marketing functions and tasks in retail and wholesale establishments and in food processing and manufacturing firms that deal primarily with food and beverage products for use in either the home or commercial institutions.

CIP Code: 08.0601

Suggested Grade Level: 11-12

Prerequisites: None

Approved Courses: Food Marketing (8150)
Advanced Marketing (8130--co-op) or (8131) (see page 12)

Related Postsecondary Programs: None identified

Food Marketing 8150 (co-op)

Grade Level: 11 or 12 (suggested) (36 weeks) Prerequisites: None

Students gain basic knowledge of the food marketing industry and develop competencies necessary for successful employment in food marketing business. They develop (a) general marketing competencies necessary for successful employment in food marketing; (b) general marketing competencies applied to the food marketing industry; and (c) specialized competencies unique to food marketing. These include social and economic competencies as well as the areas of personal selling, promotion, purchasing, physical distribution, and marketing mathematics.

Financial Services Marketing (Specialized Program)

Description: This specialized marketing program prepares students to perform marketing functions and tasks in financial institutions such as commercial banks, savings and loan associations, credit agencies, credit unions, consumer-finance companies, collection agencies, security and commodity brokerages, and credit departments of business enterprises.

CIP Code: 08.0401

Suggested Grade Level: 11-12

Prerequisites: None

Approved Courses: Financial Services Marketing (8180--co-op) or (8181)
Advanced Marketing (8130--co-op) or (8131) (see page 12)

Related Postsecondary Programs: Business Management
Marketing

Financial Services Marketing 8180 (co-op)
Financial Services Marketing 8181 (oe)

Grade Level: 11 or 12 (36 weeks) Prerequisites: None

In this specialized course, students with a career interest in the financial services marketing field gain an understanding of the financial services marketing industry, with emphasis in the areas of monetary systems; types of financial institutions; careers in finance; the Federal Reserve System; negotiable instruments; and advertising and public relations associated with this field. Competencies necessary for entry-level employment in this industry area include mathematics, oral and written communication, and accounting procedures.

Tourism and Travel Services Marketing (Specialized Program)

Description: This specialized marketing education program is designed for students with a designated occupational interest in the transportation industry specialties of travel and tourism marketing. Students learn management methods and techniques related to the travel industry, industry technology, marketing research, and computerized systems.

CIP Code: 08.1104 (Tourism)
08.1105 (Travel Services Marketing)

Suggested Grade Level: 11-12

Prerequisites: None

Approved Courses: Travel and Tourism Marketing (8165--co-op) or (8166)
Advanced Travel and Tourism Marketing (8167--co-op) or (8168)
Advanced Marketing (8130--co-op) or (8131) (see page 8)

Related Postsecondary Programs: Travel Services Marketing

Travel and Tourism Marketing 8165 (co-op)
Travel and Tourism Marketing 8166 (oe)

Grade Level: 11 or 12 (suggested) (36 weeks) Prerequisites: None

Students develop competencies in the areas of communication, human relations, travel mathematics, creative selling, sales promotion, industry technology, and market research. They learn the computerized systems used by major airlines and travel agencies. In addition, students obtain a thorough understanding of the travel and tourism industry and the career options available.

Students enrolled in the co-op course (8165) combine a maximum of 360 hours of intensive classroom instruction and occupational experiences in daily blocks of instruction which are planned, supervised, and documented by the marketing education teacher-coordinator. **In addition**, students receive 540 hours of supervised on-the-job training throughout the school year.

Advanced Travel and Tourism Marketing 8167 (co-op)
Advanced Travel and Tourism Marketing 8168 (coe)

Grade Level: 12 (36 weeks)

Prerequisites: Travel and Tourism Marketing 8165 or 8166

Students gain in-depth knowledge of the marketing functions within the travel-tourism industry and the management responsibilities for those functions. They develop advanced competencies in the areas of communication, human relations, travel mathematics, creative selling, promotion, industry technology, and marketing research.

Students enrolled in the co-op course (8167) combine a maximum of 360 hours of intensive classroom instruction and occupational experiences in daily blocks of instruction which are planned, supervised, and documented by the marketing education teacher-coordinator. In addition, students receive 540 hours of supervised on-the-job training throughout the school year.

Real Estate Marketing (Specialized Program)

Description: This introductory course is designed for students interested in pursuing a career in Real Estate Marketing. Successful completion of the course will provide the student with competencies required of individuals entering the real estate industry in the position of real estate agent/sales associate.

CIP Code: 52.1501

Suggested Grade Level: 12

Prerequisites: None

Approved Courses: Real Estate Marketing (8191)

Related Postsecondary Courses:
Real Estate Law
Real Estate Finance
Real Estate Appraisal
Real Estate Brokerage

Real Estate Marketing 8191 (oe)

Grade Level: 12 (suggested) (36 weeks) Prerequisites: None

Students gain competencies related to sales ability, financing of real estate, ownership rights, investments, ethics, and 60 hours of Real Estate Principles (requirements for admission to the Virginia Real Estate exam). Upon successful completion of the course, taught by an instructor approved by the Marketing Education Service and the Virginia Real Estate Commission, students are eligible to take the state real estate licensing exam.

Senior Intensified

Description: These courses are designed for students in the twelfth grade with no previous credits in marketing education.

CIP Code:

Suggested Grade Level: 12

Prerequisites: None

Approved Courses: Checker Education (8151)
Retail Selling (8122)

Related Postsecondary Courses: None identified

Checker Education 8151

Grade Level: 12 (suggested) (18 weeks) Prerequisites: None

Checker Education is a one-semester, single-period course offered on an elective basis for twelfth-grade students for a minimum of one-half credit. Students develop occupational competencies required for entry-level employment as a cashier checker. Emphasis is on operating a cash register, cashing checks and making change, computing tax, bagging merchandise, reading a scale and computing produce weight, figuring split prices, detecting pilferage, processing food stamps, and developing effective customer relations.

Vocational application is provided through a laboratory especially designed for food marketing. Activities take place during school hours and are planned and supervised by the marketing education coordinator.

Retail Selling 8122

Grade Level: 12 (suggested) (18 weeks) Prerequisites: None

Retail Selling is a one-semester, single-period course offered on an elective basis for twelfth-grade students for a minimum of one-half credit. Students develop occupational competencies required for entry-level employment in retail selling. Emphasis is on successful interview techniques, effective human relations, attitudes essential for job success, sales techniques, retail arithmetic, and stockkeeping.

Vocational application is provided through classroom projects, supervised learning experiences in local businesses, or placement in a retail selling job. Activities may take place during or after school hours and are planned and supervised by the marketing education coordinator.

Marketing Education
Approved Program Completer Options

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
General Marketing Program Fundamentals of Marketing (8110) Introduction to Marketing (8111) Marketing (8120/8121) Advanced Marketing (8130/8131)	One 36-week General Marketing cooperative course or Two 36-week General Marketing occupational experiences courses	Fundamentals of Marketing (8110) or Introduction to Marketing (8111) Marketing (8120/8121) Advanced Marketing (8130/8131) or Marketing (8120/8121) Advanced Marketing (8130/8131) or Marketing (8120/8121) and One of the Executive Marketing courses*
Executive Marketing Program Planning for Entrepreneurship (8190) International Marketing (8135) Marketing Management (8132)	Completion of any two courses	Planning for Entrepreneurship (8190) or International Marketing (8135) or Marketing Management (8132) and Marketing (8120/8121) or Fashion Marketing (8140/8141) or Hotel/Motel Marketing (8162/8163) or Sports, Entertainment and Recreation Marketing (8175/8176) or Restaurant Marketing (8170) or Financial Services Marketing (8180/8181) or Food Marketing (8150) or Travel and Tourism Marketing (8165/8166) or Real Estate Marketing (8191)

Note: Options in column 3 that are marked with an asterisk require careful consideration of the student's interests, career goals, and plans for postsecondary studies.

Marketing Education
Approved Program Completer Options
(continued)

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Apparel and Accessories Marketing (Specialized Program) Fashion Marketing (8140/8141) Advanced Fashion Marketing (8145/8146)	One 36-week Apparel and Accessories Marketing cooperative course or Two 36-week occupational experiences courses	Fashion Marketing (8140/8141) Advanced Fashion Marketing (8145/8146) or Marketing (8120/8121) Advanced Fashion Marketing (8145/8146) or Fashion Marketing (8140/8141) Advanced Marketing (8130/8131) or Fashion Marketing (8140/8141) and One of the Executive Marketing courses*

Note: Options in column 3 that are marked with an asterisk require careful consideration of the student's interests, career goals, and plans for postsecondary studies.

Marketing Education
Approved Program Completer Options
(continued)

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Hospitality Marketing (Specialized Program) Hotel/Motel Marketing (8160/8161) Advanced Hotel/Motel Marketing (8162/8163) Sports, Entertainment, and Recreation Marketing (8175/8176) Restaurant Marketing (8110)	One 36-week Hospitality Marketing cooperative course **or** One 36-week occupational experiences course using the laboratory approach, i.e., Hotel/Motel Marketing	Hotel/Motel Marketing (8160/8161) Advanced Hotel/Motel Marketing (8162/8163) **or** Hotel/Motel Marketing (8160/8161) Advanced Marketing (8130/8131) **or** Hotel/Motel Marketing (8160/8161) **and** One of the Executive Marketing courses* --- Sports, Entertainment, and Recreation Marketing (8175/8176) Advanced Marketing (8130/8131) **or** Sports, Entertainment, and Recreation Marketing (8175/8176) **and** One of the Executive Marketing courses* --- Restaurant Marketing (8170) Advanced Marketing (8130/8131) **or** Restaurant Marketing (8170) **and** One of the Executive Marketing courses*

Note: Options in column 3 that are marked with an asterisk require careful consideration of the student's interests, career goals, and plans for postsecondary studies.

Marketing Education
Approved Program Completer Options
(continued)

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Financial Services Marketing (Specialized Program) Financial Services Marketing (8180/8181)	One cooperative course: Financial Services Marketing (8180) or Financial Services Marketing (8181) and One other occupational experience course	Financial Services Marketing (8180/8181) Advanced Marketing (8130/8131) or Financial Services Marketing (8180/8181) and One of the Executive Marketing courses*
Food Marketing (Specialized Program) Food Marketing (8150)	One cooperative course: Food Marketing (8150)	Food Marketing (8150) Advanced Marketing (8130/8131) or Food Marketing (8150) and One of the Executive Marketing courses*
Tourism and Travel Services Marketing (Specialized Program) Travel and Tourism Marketing (8165/8166) Advanced Travel and Tourism Marketing (8167/8168)	One 36-week Tourism and Travel Services Marketing cooperative course: Travel and Tourism Marketing (8165) or One 36-week Tourism and Travel Services Marketing occupational experiences course using the laboratory approach, i.e., Travel and Tourism Marketing (8166)	Travel and Tourism Marketing (8165/8166) Advanced Travel and Tourism Marketing (8167/8168) or Travel and Tourism Marketing (8165/8166) Advanced Marketing (8130/8131) or Travel and Tourism Marketing and One of the Executive Marketing courses*

Note: Options in column 3 that are marked with an asterisk require careful consideration of the student's interests, career goals, and plans for postsecondary studies.

Marketing Education
Approved Program Completer Options
(continued)

Programs Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Real Estate Marketing (Specialized Program) Real Estate Marketing (8191)	Real Estate Marketing (8191) and Passing grade on licensing examination	Real Estate Marketing (8191) and One of the Executive Marketing courses*

Note: Options in column 3 that are marked with an asterisk require careful consideration of the student's interests, career goals, and plans for postsecondary studies.

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Special Programs

Overview

Instructional programs in vocational education that do not fit into the category of regular offerings are referred to as "special programs." The programs are designed specifically to meet the needs of students who for a variety of reasons cannot succeed in a regular vocational program without special services and assistance. Special vocational programs offer disadvantaged and disabled students opportunities to meet realistic goals. Where other aspects of education may only reinforce the negative through repeated failures, the primary purpose of vocational special programs is to help develop the skills, knowledge, and attitudes that special needs students require to make them employable and/or capable of seeking further education and training.

Each vocational special program shall contribute to preparation for optimum employment of each student. This includes development of objectives for students based on their interests, abilities, achievement level, intelligence, aptitudes, and special needs. The same quality and variety of course offerings, instruction, equipment, and supplies made available to regular students must be made accessible to students enrolled in special vocational programs. These students shall have every opportunity to develop to their educational and/or employment potential.

Vocational Program Options for Special Needs Students

❖ Option I. Regular Vocational Education Program

Students are mainstreamed in regular vocational education programs with few or no modifications necessary.

❖ Option II. Vocational Education Program with Support Services

Students are mainstreamed in regular vocational education programs and receive special support services from personnel such as a resource teacher, itinerant teacher, interpreter, tutor, or teacher aide. Specialized equipment and resource materials should be made available. Modification of curriculum, teaching strategies, and environment must be continually examined by teachers to accommodate a wide range of special learners.

❖ Option III. Separate Vocational Education Programs and Courses

Students may enroll in separate programs and courses specially designed for the disadvantaged or disabled. Separate programs or courses are offered in the following vocational education program service areas: Agricultural Education, Business Education, Health Occupations Education, Work and Family Studies, Technology Education, and Trade and Industrial Education. For program planning, refer to the appropriate service

area sections. In addition, Special Programs service offers the Education for Employment (EFE) Program and the Work Experience Cooperative Education Program (WECEP).

Education for Employment (EFE)
Work Experience Cooperative Education Program (WECEP)

The EFE/WECEP program provides experiences that help special needs students make informed and meaningful occupational choices.

The development of work values, appropriate attitudes, and self-concept is the focus of instruction as students learn and refine their employability, job search, and job keeping skills. The ultimate goal is to keep the student in school until graduation and to provide an educational program that develops the student's vocational skills and career knowledge.

It is recommended that other vocational program options be explored before enrolling students in EFE/WECEP in order to allow the students to develop to their fullest vocational potential.

Cooperative Education

Cooperative education, a teaching method used in the WECEP program, includes supervised, on-the-job instruction. Students attend classes part of the day and work in an approved job part of the day. The teacher-coordinator, the on-the-job training sponsor, and the student develop an individualized training plan that identifies learning experiences according to the student's occupational objective. The on-the-job instruction is an extension of the classroom instruction coordinated by the in-class teacher into a single learning package. For a student to meet the objectives of WECEP, a minimum of 540 hours of on-the-job instruction is required. A student may receive credit toward graduation for classroom instruction as well as on-the-job training.

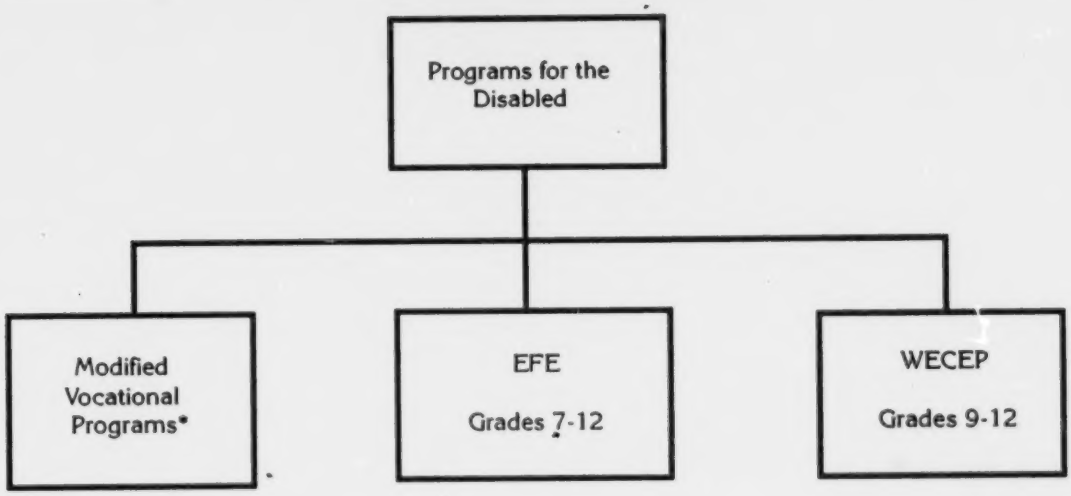
Substitution for High School Mathematics Credit

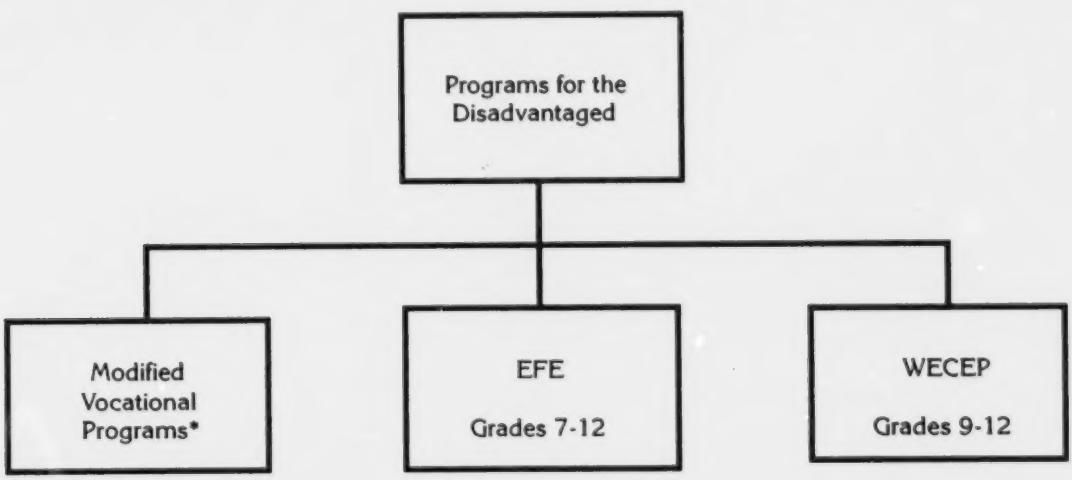
A student enrolled in EFE or WECEP must complete the full sequence for a mathematics course requirement in the 21-unit diploma, if approved locally. The following program sequences apply:

- EFE I, EFE II, and EFE III
- WECEP I and WECEP II.

Any other program sequences of EFE or WECEP must be approved by the Virginia Department of Education. Each course must be offered for a period of 36 weeks.

Special Programs: Disadvantaged/Disabled Recommended Program Sequence





* Modified vocational programs for the disadvantaged and disabled are offered in the following service areas: Agricultural Education, Business Education, Health Occupations Education, Work and Family Studies, Technology Education, and Trade and Industrial Education.

Programs and Courses
Special Programs: Disadvantaged/Disabled

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Education for Employment (Disadvantaged)*				
Education for Employment (EFE) I	9050	7-10	36	15
EFE II	9051	8-11	36	15
EFE III	9052	9-12	36	15
Work Experience Cooperative Education Program (Disadvantaged)*				
WECEP I	9020	9-11	36	15
WECEP II	9021	10-12	36	15
Education for Employment (Disabled)*				
EFE I	9053	7-10	36	10
EFE II	9054	8-11	36	10
EFE III	9055	9-12	36	10
Work Experience Cooperative Education Program (Disabled)*				
WECEP I	9030	9-11	36	10
WECEP II	9031	10-12	36	10

*Approved program

Programs for the Disadvantaged

Description:

The term *disadvantaged* refers to individuals (other than disabled individuals) who have economic or academic disadvantages and who require special services and assistance in order to succeed in vocational education programs. The term includes individuals who are members of economically disadvantaged families, migrants, individuals who have limited English proficiency, and individuals who are dropouts, or who are identified as potential dropouts, from secondary schools.

Academically Disadvantaged: For the purpose of this definition, an individual who meets one or more of the following indicators may be considered academically disadvantaged:

- Scores below the 25th percentile on a standardized achievement or aptitude test
- Secondary school grades below 2.0 on a 4.0 scale (where the grade "A" equals 4.0)
- Failure to attain minimal academic competencies.

The definition does ***not*** include individuals with learning disabilities who have been identified as disabled.

Economically Disadvantaged: An economically disadvantaged family or individual is one who is eligible for one or more of the following:

- Aid to Families with Dependent Children under Part A of Title IV of the Social Security Act
- Benefits under the Food Stamp Act of 1977
- To be counted for purposes of Section 1005 of Chapter I of Title I of the Elementary and Secondary Education Act of 1965
- Receipt of a Pell Grant or comparable state program of need-based financial assistance
- Participation in programs assisted under Title II of the Job Training Partnership Act (JTPA).

CIP Code:

Refer to Appendix A of the *VERS User's Manual.*

Suggested Grade Level:

7-12

Prequisites: None

Approved Courses:
Education for Employment (EFE) I 9050
Education for Employment (EFE) II 9051
Education for Employment (EFE) III 9052
Work Experience Cooperative Education Program (WECEP) I 9020
Work Experience Cooperative Education Program (WECEP) II 9021

Related Postsecondary Programs: N/A

Education for Employment (EFE) I 9050 (36 weeks)
Education for Employment (EFE) II 9051 (36 weeks)
Education for Employment (EFE) III 9052 (36 weeks)

Grade Level: 7-12 Prerequisites: None

Education for Employment (EFE) is designed to help the disadvantaged student prepare for successful employment. Instruction focuses on goals and behaviors important for employment, occupational preparation, human relations, and independent living. The course designation as I, II, or III refers to the level of instruction. Suggested sequence: EFE I for grades 7, 8, 9, or 10; EFE II for grades 8, 9, 10, or 11; and EFE III for grades 9, 10, 11, or 12. Cooperative, part-time training may be a part of this program for students 14 years of age or older.

Work Experience Cooperative Education Program (WECEP) I 9020 (36 weeks)
Work Experience Cooperative Education Program (WECEP) II 9021 (36 weeks)

Grade Level: 9-12 Prerequisites: None (EFE recommended)

Work Experience Cooperative Education Program (WECEP) is designed to help the disadvantaged student prepare for successful participation in a chosen occupation. The course content is the same as that in Education for Employment with the addition of cooperative work training as a required part of the program. The course designation as I or II refers to the level of instruction. Suggested sequence: WECEP I for grades 9, 10, or 11 and WECEP II for grades 10, 11, or 12.

Programs for the Disabled

Description: The term *disabled,* when applied to individuals, means those who

- are mentally retarded
- are hard of hearing
- are deaf
- are speech-impaired
- are visually handicapped
- are seriously emotionally disturbed
- are orthopedically impaired
- have other health impairments
- have specific learning disabilities.

These persons require special education and related services, and because of their disabling condition, cannot succeed in the regular vocational education program without special educational assistance or require a modified vocational education program.

CIP Code: Refer to Appendix A of the *VERS User's Manual.*

Suggested Grade Level: 7-12

Prerequisites: None

Approved Courses:
Education for Employment (EFE) I 9053
Education for Employment (EFE) II 9054
Education for Employment (EFE) III 9055
Work Experience Cooperative Education Program (WECEP) I 9030
Work Experience Cooperative Education Program (WECEP) II 9031

Education for Employment (EFE) I 9053 (36 weeks)
Education for Employment (EFE) II 9054 (36 weeks)
Education for Employment (EFE) III 9055 (36 weeks)

Grade Level: 7-12 Prerequisites: None

Education for Employment (EFE) is designed to help the disabled student prepare for successful employment. Instruction focuses on goals and behaviors important for

employment, occupational preparation, human relations, and independent living. The course designation as I, II, or III refers to the level of instruction. Suggested sequence: EFE I for grades 7, 8, 9, or 10; EFE II for grades 8, 9, 10, or 11; and EFE III for grades 9, 10, 11, or 12. Cooperative, part-time training may be a part of this program for students 14 years of age or older.

Work Experience Cooperative Education Program (WECEP) I 9030 (36 weeks)
Work Experience Cooperative Education Program (WECEP) II 9031 (36 weeks)

Grade Level: 9-12 Prerequisites: None (EFE recommended)

Work Experience Cooperative Education Program (WECEP) is designed to help the disabled student prepare for successful participation in a chosen occupation. The course content is the same as that in Education for Employment with the addition of cooperative work training as a required part of the program. The course designation as I or II refers to the level of instruction. Suggested sequence: WECEP I for grades 9, 10, or 11 and WECEP II for grades 10, 11, or 12.

Special Programs
Approved Program Completer Options

NOTE: All information for Special Programs refers to credits earned above the eighth-grade level.

PROGRAMS Courses (Codes)	MINIMUM REQUIREMENTS FOR PROGRAM COMPLETION	RECOMMENDED FOR VOCATIONAL CONCENTRATION
EDUCATION FOR EMPLOYMENT (DISADVANTAGED) EFE I (9050) EFE II (9051) EFE III (9052)*	EFE I EFE II **or** EFE I WECEP I (Disadvantaged)	Minimum requirements **and** Appropriate vocational courses related to student's career interest
WORK EXPERIENCE COOPERATAIVE EDUCATION PROGRAM (DISADVANTAGED) WECEP I (9020) WECEP II (9021)	WECEP I WECEP II **or** EFE I WECEP I	Minimum requirements **and** Appropriate vocational courses related to student's career interest
EDUCATION FOR EMPLOYMENT (DISABLED) EFE I (9053) EFE II (9054) EFE III (9055)*	EFE I EFE II **or** EFE I WECEP I (Disabled)	Minimum requirements **and** Appropriate vocational courses related to student's career interest
WORK EXPERIENCE COOPERATIVE EDUCATION PROGRAM (DISABLED) WECEP I (9030) WECEP II (9031)	WECEP I WECEP II **or** EFE I WECEP I	Minimum requirements **and** Appropriate vocational courses related to student's career interest

*Local option

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Technology Education in Virginia

Overview

A Technology Education program must ensure that citizens of tomorrow are prepared to live in and contribute to a competitive and technologically based society.

Mission

The Technology Education program teaches students to understand, use, and control technology. The curriculum covers the development of technology and its effect on people, the environment, and society. Students learn how to adjust to change, to deal with forces that influence their future, and to participate in controlling their future.

In the Technology Education laboratory, students develop insights into the application of technological concepts, processes, and systems. They are prepared to be active participants in controlling their future.

The study of technology stimulates a learning cycle that includes the following:

- a sense of accomplishment and satisfaction
- an excitement that generates further exploration
- a desire to relate this new ability to other areas.

Consequently, studying technology fosters learning in science and mathematics as well.

Goals

Program goals lead to the development of technologically literate people. Consistent with their abilities, interests, and educational needs, students completing a technology education program will achieve the following goals:

- ❖ Comprehend the dynamics of technology, including its development, impact, and potential.
- ❖ Employ the technological processes of problem-solving, creating, and designing.
- ❖ Analyze the behavior of technological systems and subsystems, including the tools, materials, processes, energy, information, and people involved in systems.
- ❖ Apply scientific principles, engineering concepts, and technological systems in the processes of technology.
- ❖ Discover and develop personal interests and abilities related to a wide variety of technology-oriented careers.

Middle School Program (Grades 6-8)

The Technology Education program designed especially for the early adolescent provides the student with active learning situations and higher-order thinking skill development through practical problem-solving experiences. The program, titled *Explorations in Technology,* addresses two principal tenets of early adolescent education: (1) help learners discover and explore personal interests, aptitudes, and abilities; and (2) provide learners with experiences in technology.

Goal: Explorations in Technology

The goal of the middle school program is to assist students in exploring and preparing for appropriate educational and technological choices.

The program consists of three levels or courses. One is available for each grade level of the school structure. Each level, whether offered for 9, 12, 18, or 36 weeks, includes the four basics of technology: resources, processes, systems, and impacts. Students study these four components within the changing context of each level.

- The first level stresses **resources and problem solving.** Students discover that resources undergirding technology are the same no matter where they are applied. Problem solving, the inherent process of technology, becomes a way of thinking and creating new ideas.

- The second level accentuates **creativity in problem solving.** Students build models of existing inventions and explore possibilities for future inventions and innovations.

- The third level emphasizes **technological systems.** By simulating these systems, assessing their impacts, and relating these discoveries to the experiences of the two previous levels, students acquire a global view of technology.

Learner Benefits

The rich experiences of the three-level sequence help learners acquire knowledge and the process skills of technology. These experiences also help learners discover and explore the personal interests, aptitudes, and abilities necessary to make wise decisions regarding educational and career opportunities.

High School Programs (Grades 9-12)

The technology education program for the high school provides challenging experiences for the adolescent learner. Program content stems from the study of a variety of technologies and challenges the student's ability to apply scientific principles, engineering concepts, and technological systems.

Goal: Application of Technology to Life and Work

The goal of the high school technology program is to assist students in applying technology to their needs and in making intelligent judgments about problems associated with technology.

The high school student of technology education shall . . .

- ❖ evaluate technology's capabilities, uses, and impact on individuals, the environment, and society
- ❖ apply design concepts to solve problems and extend human potential
- ❖ employ the resources of technology to analyze the behavior of technological systems
- ❖ apply scientific principles, engineering concepts, and technological systems in the processes of problem solving, creating, and designing
- ❖ develop personal interests and abilities related to careers in technology and engineering.

Learner Benefits

Completion of the high school Design and Technology program prepares the student for technical or professional programs of higher education. The student becomes a technological thinker and innovator through practical applications of mathematics, science, and technology. The program engages the student in applications of the technological method in real world situations. Further, these experiences enable the student to visualize and assess the impacts of technology and develop designs for the future.

Student Organization: Technology Student Association

Activities of the Technology Student Association (TSA) are included as a part of the instructional program to promote leadership qualities, high standards of craft quality, scholarship, and safety. Teachers integrate TSA experiences within their instruction by providing for students . . .

- an involvement with the community's industrial and technological resources.
- activities in parliamentary procedures and democratic decision making.
- recognition for exemplary performances.

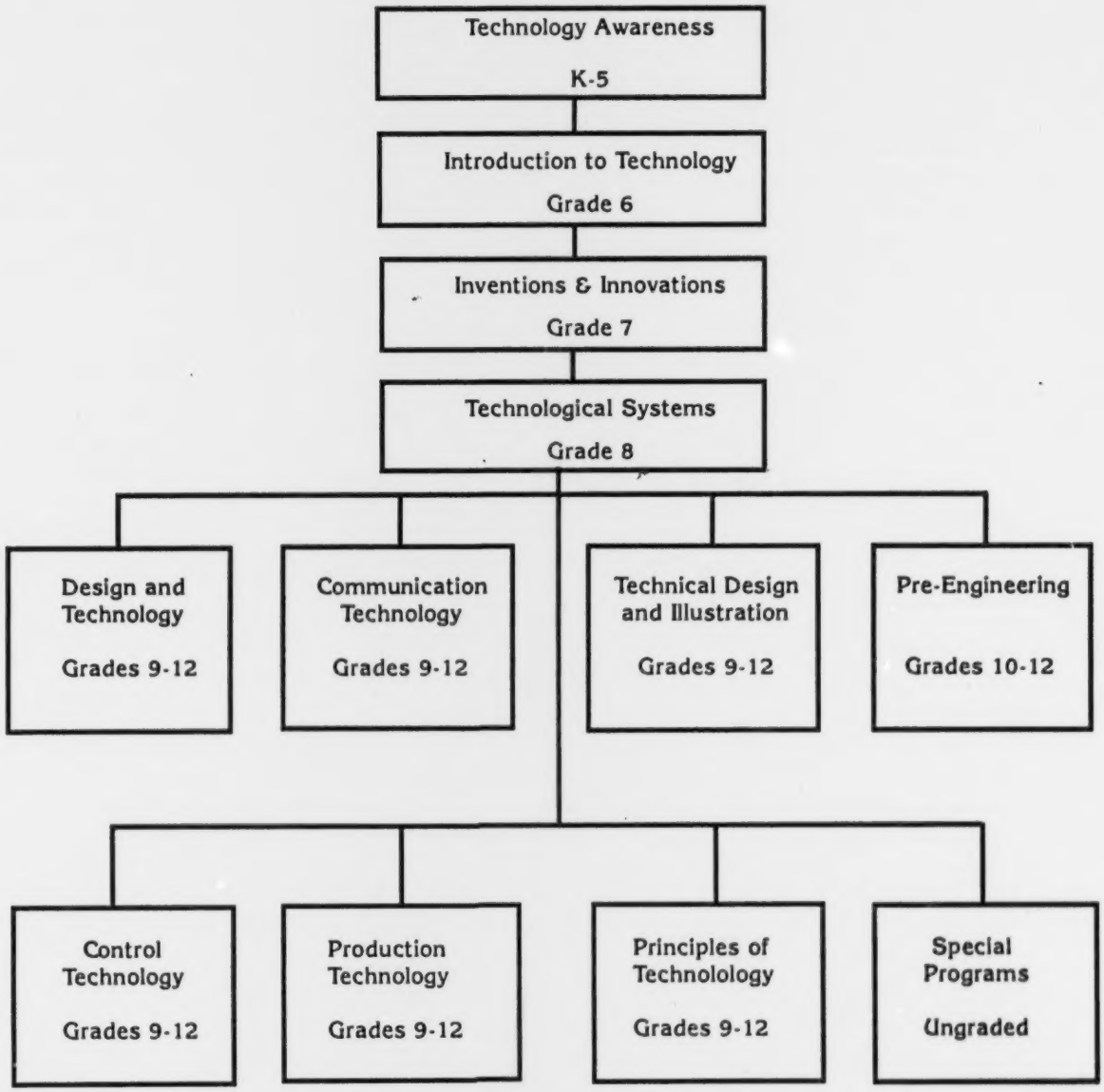
Substitution for High School Science, Mathematics, and Practical Arts Credits

Students who fulfill the requirements of the following may substitute it for one unit of high school elective mathematics or science in a 21-unit diploma, if approved as a local option:

- Completion of any two courses in a technology program with at least two credits earned above the eighth-grade level.

High school Technology Education courses meet requirements for a practical arts elective.

Technology Education
Recommended Program Sequence



Technology Education Programs and Sequences of Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Technology Awareness	8410	K-5		
Middle School Program				
Introduction to Technology	8481/8484 8482/8483	6	9/12/18/36	20
Inventions and Innovations	8485/8464/ 8461	7	12/18/36	20
Technological Systems	8486/8463/ 8462	8	12/18/36	20
Design and Technology Program				
Technology Foundations	8402/8403	9-12	18/36	20
Technology Transfer	8404/8405	10-12	18/36	20
Technology Assessment	8406/8407	11-12	18/36	20
Pre-Engineering Program				
Introduction to Engineering	8490	10-12	36	20
Research and Development Engineering	8491	11-12	36	20
Communication and Information Technology Sequence				
Computing Systems	8420/8421	9-11	18/36	20
Communication Systems	8418/8415	9-11	18/36	20
Graphic Communications	8494/8458	10-12	18/36	20
Control Technology Sequence				
Electronics Technology I	8417/8416	9-11	18/36	20
Electronics Technology II	8412	10-12	36	20
Power and Transportation	8444/8445	9-11	18/36	20
Energy and Power	8495/8448	10-12	18/36	20
Production Technology Sequence				
Production Systems	8446/8447	9-11	18/36	20
Materials and Processes	8478/8433	9-11	18/36	20
Construction	8432/8431	10-12	18/36	20
Manufacturing	8426/8425	10-12	18/36	20
Technical Design and Illustration Sequence				
Basic Technical Drawing/Design/CAD	8434/8435	9-11	18/36	
Engineering Drawing/Design/CAD	8493/8436	10-12	18/36	
Architectural Drawing/Design/CAD	8492/8437	10-12	18/36	
Principles of Technology Sequence				
Principles of Technology I	9811	10-12	36	20
Principles of Technology II	9812	11-12	36	20
Special Courses				
Careers and You	8475	6-7	9/18/36	
Industrial Occupational Exploration	8473/8472	8-10	18/36	20
Vocational Occupational Exploration--Disadvantaged	8469	Ungraded		15
Vocational Occupational Exploration--Handicapped	8471	Ungraded		10
Technology Education--Dual Enrollment (College/University)	8498	11-12	36	20

Technology Awareness

Description: Technology Education experiences in the elementary school are designed to help students learn and achieve the educational goals of the total elementary school program. These experiences orient students to technology, develop psychomotor skills, and refine attitudes about technology's influence on society. Technology-based activities should be integrated into the total elementary school curriculum so that activities motivate students and reinforce the subject matter.

Technology education in the elementary school

- provides opportunities for children to learn fundamental concepts of how people create and control technology
- reinforces and enriches concepts of the elementary school curriculum
- allows students to work with tools, materials, and technological concepts and processes to explore ways in which technology influences society.

CIP Code: 21.0101

Suggested Grade Level: K-5

Suggested Experiences:

- Problem solving using the technological method
- Interdisciplinary studies using real-world technology applications
- Creative thinking using inventiveness, engineering, and economics
- Information technology using computers, telecommunications, videos, and graphics
- Psychomotor development using manipulative materials, tools, and modeling packages
- Building of self-confidence by talking, writing, and drawing/illustrating for others

Program: Middle School Explorations in Technology

Description: Technology Education at the middle school level (grades 6-8) introduces students at each grade level to the broad nature of technology through a planned sequence of specially designed hands-on explorations in technology.

Through laboratory activities in which they learn to solve relevant technological problems, students gain insights into the underlying fundamentals of technology. They learn to recognize the social and environmental impacts of technology and develop skills in using the processes of technology to accomplish results.

Students also refine their physical, cognitive, and affective skills through experiences that encourage eye-hand coordination, observation, prediction, analysis, evaluation, and creativity.

CIP Code: 21.0101

Suggested Grade Level: 6, 7, 8

Prerequisites: None

Approved Courses:
Introduction to Technology 8481/8484/8482/8483
Inventions and Innovations 8485/8464/8461
Technological Systems 8486/8463/8462

Related Postsecondary Programs: N/A

Introduction to Technology 8481 (9 weeks)
Introduction to Technology 8484 (12 weeks)
Introduction to Technology 8482 (18 weeks)
Introduction to Technology 8483 (36 weeks)

Grade Level: 6 Prerequisites: None

Students first study the basic elements of all technology, including processes, energy, information, and people. They explore up to four systems of technology, including construction, transportation, communication, and production/manufacturing. Finally, they relate the impact of technology on society, environment, and culture to future consequences and decisions.

Inventions and Innovations 8461 (36 weeks)
Inventions and Innovations 8464 (18 weeks)
Inventions and Innovations 8485 (12 weeks)

Grade Level: 7 Prerequisites: None

Students make models of significant inventions that have advanced society. After studying these developments, they explore contemporary technological problems facing them, their community, or the world and apply systematic procedures to invent new products or innovations as solutions.

Technological Systems 8462 (36 weeks)
Technological Systems 8463 (18 weeks)
Technological Systems 8486 (12 weeks)

Grade Level: 8 Prerequisites: None

Students combine resources and techniques into systems, realizing technology as a system. By simulating systems, assessing their impacts, and relating this experience to the two previous levels, students gain an insight into how to approach the problems and opportunities of a technological world in a broad sense. They also explore occupational areas and educational programs for technology-oriented careers.

Program: Design and Technology

Description: This activity-based lab program for high school students offers a sequence of three courses focused on concepts and skills that serve as a foundation for a lifetime of interest and application. Students develop a technological capability that allows them to

- know and use the technological method of problem solving
- build and control systems with computers
- expand imaginative and mechanical abilities
- assess and design/improve technologies
- adapt to changes in technology.

Design and Technology presents a core of technological understanding and know-how that serves as the educational foundation of all students, regardless of sex, race, academic talent, or life goals.

CIP Code: 21.0101

Suggested Grade Level: 9-12

Prerequisites: None

Approved Courses:
Technology Foundations (8402/8403)
Technology Transfer (8404/8405)
Technology Assessment (8406/8407)

Related Postsecondary Programs:
Engineering
Science
Sociology
Technology

Technology Foundations 8403 (36 weeks)
Technology Foundations 8402 (18 weeks)

Grade Level: 9, 10, 11, or 12 Prerequisites: None

In the beginning high school course in Technology Education, students acquire a foundation in technological material, energy, and information and apply processes associated with the technological thinker. Challenged by laboratory activities, students create new ideas and innovations, build systems, and analyze technological products to learn further how and why technology works. They work in groups to build and control systems with engineering in the development of a technology.

Technology Transfer 8405 (36 weeks)
Technology Transfer 8404 (18 weeks)

Grade Level: 10, 11, or 12 Prerequisites: Technology Foundations

Building upon Technological Foundations, students work with a variety of computers, materials, and systems to improve their skills and knowledge. Groups work together on a project that combines systems such as production, energy, communication, transportation, and other technologies. These activities are transferred to other courses in the school because the students use math, science, and communication to design and build a computer device, an energy efficient vehicle, or a multinational package. Thematic activities engage students in community problems where they transfer the technological method to address recycling, space exploration, and housing.

Technology Assessment 8407 (36 weeks)
Technology Assessment 8406 (18 weeks)

Grade Level: 11 or 12 Prerequisites: Technology Transfer

Technology Assessment is offered as a capstone course for students in high school. Students use their knowledge and abilities in math, science, and technology to analyze the contributions of technical devices to their homes and the world. Students use information they acquire through library research or computer databases to predict the future. They design futuristic products and use assessment to determine possible results. They also use computer graphics, videotapes, and design portfolios to present their newly created products and systems.

Program: Pre-Engineering

Description: Designed to introduce students to engineering and related careers, this program integrates mathematics and science concepts into high-tech engineering-type activities. Students explore challenges of a career as an engineer, technologist, or technician.

Students build competencies relevant to engineering principles such as problem solving, materials processing, and materials science. These experiences are useful to the future engineer, technologist, or technician.

CIP Code: 21.0101

Suggested Grade Level: 10, 11, or 12

Prerequisites: None

Approved Courses: Introduction to Engineering 8490
Research and Development Engineering 8491

Related Postsecondary Programs: Engineering Technologist
Technician

Introduction to Engineering 8490 (36 weeks)

Grade Level: 10, 11, or 12 Prerequisites: None

While undergoing an orientation to the careers and challenges of engineering, students are actively involved with high-tech devices, engineering graphics, and math/scientific principles through problem-solving experiences. Activities in descriptive geometry, materials science, and technical systems challenge students as they communicate information through seminars, technical reports, and idea sharing.

Research and Development Engineering 8491 (36 weeks)

Grade Level: 11 or 12 Prerequisites: Introduction to Engineering

To learn the applications and design process of engineering, students form engineering teams and select a group design project. Each team uses communications, graphics, mathematics, and community resources to solve problems. Each team learns appropriate information in order to complete a project. Projects may be models, systems, or products that creatively solve an engineering problem.

Sequence: Communication and Information Technology

Description:

Communication and Information Technology is a high school sequence consisting of at least two classroom/laboratory courses (300 hours of instruction). Students develop competencies in the areas of communication and media, resulting in occupational readiness useful to the future craftsperson, technician, technologist, or consumer.

Students who complete the sequence are prepared with competencies that build a long-range foundation of technical application and adaptation useful for immediate employment or articulation with advanced occupational preparation programs, apprenticeship, community college, or university programs.

CIP Code: 21.0101

Suggested Grade Level: 9-12

Approved Courses:

Computing Systems 8421/8420
Communication Systems 8418/8415
Graphic Communications 8494/8458

Related Postsecondary Programs:

Broadcasting
Data Processing
Photography
Printing
Radio and Television
Publishing
Electronics

Computing Systems 8421 (36 weeks)
Computing Systems 8420 (18 weeks)

Grade Level: 9, 10, or 11 Prerequisite: None

Students engage in a very broad study of the technical aspects of computers and their application to production, transportation, and communication systems. Topics include computer equipment and operating systems, programming, control processing information, and social/cultural impact of computers. Problem-solving activities challenge students to plan, program, and interface devices with computer systems. Learning activities include experiences with robotics and control systems, computer-aided design, and computer-aided manufacturing.

Communications Systems 8415 (36 weeks)
Communications Systems 8418 (18 weeks)

Grade Level: 9, 10, or 11 Prerequisite: None

Students use technology to communicate information in visual or audio formats. Communication systems are an integral part of the other technological activities involving input, processing, output, and feedback. Students employ tools, materials, and other elements in the application of communication systems and subsystems to solve problems, create effective media, and process information. Through the course, students develop personal interests and analyze the impact of communication systems on people, society, and culture.

Graphic Communications 8458 (36 weeks)
Graphic Communications 8494 (18 weeks)

Grade Level: 10, 11, or 12 Prerequisite: None

Graphic Communications deals with printed images such as newspapers, books, printed T-shirts, signs, photographs, wallpaper, or stationery. Students use a variety of graphic arts equipment, materials, and processes to make visual projects. Students design, plan, and reproduce products similar to those produced by the graphic arts industry. Cameras, printing presses, and copy machines are among the many equipment items used.

Sequence: Control Technology

Description:

Control Technology is a high school sequence consisting of at least two classroom/laboratory courses (300 hours of instruction). Students who are interested in technical careers or who wish to further their understanding of the physical principles underlying modern technology will benefit from this sequence.

Students completing the sequence are prepared with competencies that build a long-range foundation of technical application and adaptation useful for immediate employment or articulation with advanced occupational preparation programs, apprenticeship, community college, or university programs.

CIP Code: 21.0101

Suggested Grade Level: 9-12

Approved Courses:

Electronics Technology I 8417/8416
Electronics Technology II 8412
Power and Transportation 8444/8445
Energy and Power 8495/8448

Related Postsecondary Programs:

Aeronautics
Automotive
Electronics Technology
Electrical Engineering
Engineering Technology
Mechanical Engineering
Science

Electronics Technology I 8416 (36 weeks)
Electronics Technology I 8417 (18 weeks)

Grade Level: 9, 10, or 11 Prerequisites: None

In this single-period laboratory course, students experiment with simple electrical devices and circuits and build projects using DC and AC devices and circuits.

Electronics Technology II 8412 (36 weeks)

Grade Level: 10, 11, or 12 Prerequisites: Electronics Technology I

Students work with electronics devices, instruments, and circuits, building projects to apply theories and laws with electronic components such as resistors, capacitors, and transistors. They also study integrated circuits used in computers, amplifiers, television, and other equipment. Electronics Technology II is designed as a single-period laboratory course.

Power and Transportation 8445 (36 weeks)
Power and Transportation 8444 (18 weeks)

Grade Level: 9, 10, or 11 Prerequisites: None

Students survey the many broad sources of energy and power used in power and transportation systems. Instruction in this single-period course includes ways that (1) energy is converted to power; (2) power is transmitted and controlled; and (3) power is used through mechanical, fluid, and electrical devices. Students explore career opportunities in power and transportation fields and build projects, conduct experiments, and repair mechanical devices such as small engines, electrical motors, and outboard motors.

Energy and Power 8448 (36 weeks)
Energy and Power 8495 (18 weeks)

Grade Level: 10, 11, or 12 Prerequisites: None

In this single-period laboratory course, students learn about the application of power and energy systems to common power devices and transportation vehicles and apply theory to the practical servicing of common machines such as small gasoline engines, outboard motors, motorcycles, and lawnmowers.

Sequence: Production Technology

Description:

Production Technology is a high school sequence consisting of at least two classroom/laboratory courses (300 hours of instruction). To complete the sequence, students may take two 36-week courses, four 18-week courses, or any combination thereof.

Students develop competencies in the areas of materials, sciences, processes, and enterprise, resulting in occupational readiness for the future craftsperson, technician, technologist, or consumer.

Students completing the sequence are prepared with competencies that build a long-range foundation of technical application and adaptation useful for immediate employment or articulation with advanced occupational preparation programs, apprenticeships, community college, or university programs.

CIP Code: 21.0101

Suggested Grade Level: 9-12

Prerequisites: None

Approved Courses:

Production Systems 8446/8447
Materials and Processes Technology 8478/8433
Construction Technology 8432/8431
Manufacturing Technology 8426/8425

Related Postsecondary Programs:

Industrial Engineering Technology
Building Trades
Sheet Metal
Furniture Reconstruction
Manufacturing Technology
Architecture
Construction

Production Systems 8447 (36 weeks)
Production Systems 8446 (18 weeks)

Grade Level: 9, 10, or 11 Prerequisites: None

Students plan, design, develop, and market products, using technology such as computer-aided manufacturing (CAM), computer numerical control, and robots used in flexible manufacturing systems. They analyze markets, design and develop prototypes, determine impact, and plan new businesses needed by people and society. Students consider the social, cultural, and economic impacts of automation. The class determines major production systems employed by local industries.

Materials and Processes Technology 8433 (36 weeks)
Materials and Processes Technology 8478 (18 weeks)

Grade Level: 9, 10, or 11 Prerequisites: None

Students focus on industrial/technical materials and processes as they fabricate usable products and conduct experiments. Learning experiences include career analysis as well as the use of tools and equipment related to analysis, testing, and processing of metals, plastics, woods, ceramics, and composite materials. This single-period laboratory course is recommended for students interested in technical careers and others wishing to improve their consumer knowledge and technological literacy.

Construction Technology 8421 (36 weeks)
Construction Technology 8432 (18 weeks)

Grade Level: 10, 11, or 12 Prerequisites: None

Students in this single-period laboratory course design, build, and test scale-model structures, working with projects that help them to understand the jobs of architects, carpenters, electricians, plumbers, surveyors, contractors, masons, design engineers, and a variety of other construction careers. (This course is a companion to Manufacturing Technology.)

Manufacturing Technology 8425 (36 weeks)
Manufacturing Technology 8426 (18 weeks)

Grade Level: 10, 11, or 12 Prerequisites: None

Students organize and operate a manufacturing company to explore careers and work habits typical of American industry's free enterprise system. Students make projects or products in the company that can be sold, while experiencing the work of planners, designers, engineers, machine operators, personnel managers, and a variety of other manufacturing careers. (This course is a companion to Construction Technology.)

Sequence: Technical Design and Illustration

Description:

Technical Design and Illustration is a high school sequence consisting of at least two of the three approved classroom/ laboratory courses (300 hours of instruction). To complete the sequence, students must take Basic Technical Drawing and one of the other two courses listed. They develop competencies in the areas of drafting and design, resulting in occupational readiness useful to the future craftsperson, technician, technologist, engineer, or consumer.

Students completing the sequence are prepared with competencies that will build a long-range foundation of technical application and adaptation useful for immediate employment, apprenticeship, or university programs.

CIP Code: 21.0101

Suggested Grade Level: 9-12

Prerequisites: None

Approved Courses:

Basic Technical Drawing/Design/CAD 8434/8435
Architectural Drawing/Design/CAD 8492/8437
Engineering Drawing/Design/CAD 8493/8436

Related Postsecondary Programs:

Drafting
Interior Design
Industrial Engineering Technology
Architecture
Engineering Design

Basic Technical Drawing/Design/CAD 8435 (36 weeks)
Basic Technical Drawing/Design/CAD 8434 (18 weeks)

Grade Level: 9, 10, or 11 Prerequisites: None

In this foundation course students learn the basic language of industry and technology and they design, sketch, and make technical drawings, models, or prototypes of real design problems. The course is especially recommended for future engineering and architecture students.

Architectural Drawing/Design/CAD 8437 (36 weeks)
Architectural Drawing/Design/CAD 8492 (18 weeks)

Grade Level: 10, 11, or 12 Prerequisites: Basic Technical Drawing/Design

Students learn the principles of architecture and increase understanding of working drawings and construction techniques learned in the prerequisite course. Experiences include residential and commercial building designs, rendering, model making, structural details, and community planning. Students use computer-aided drawing and design (CAD) equipment and established standards or codes to prepare models for presentation. The course provides information helpful for the homeowner and is especially beneficial to the future architect, interior designer, or homebuilder.

Engineering Drawing/Design/CAD 8436 (36 weeks)
Engineering Drawing/Design/CAD 8493 (18 weeks)

Grade Level: 10, 11, or 12 Prerequisites: Basic Technical Drawing/Design

Students use a graphic language for product design, technical illustration, assembly, patent, and aeronautical drawings. They increase their understanding of drawing techniques learned in the prerequisite course. Students use computers, calculators, and descriptive geometry and adhere to established standards to solve design problems. Throughout the course, they hold seminars, meet engineers, and tour drafting offices in order to learn about the benefits of the course on their future study and career.

Sequence: Principles of Technology

Description:

Principles of Technology is a two-course sequence in which students apply physics and math principles through a unified systems approach for a broad knowledge base of the principles underlying modern technical systems. As a foundation for more education and training in advanced technology career paths, the "principles and systems" approach ensures career flexibility as machines and technology advance. The two-year sequence covers 14 technical principles: force, work, rate, resistance, energy, power, force transformers, momentum, waves and vibrations, energy convertors, transducers, radiation, optical systems, and time constants.

Students completing the sequence are prepared with competencies that build a long-range foundation of technical application and adaptation useful for immediate employment or articulation with advanced occupational preparation programs in community college or continuing education.

CIP Code:

21.0101

Suggested Grade Level:

10-12

Approved Courses:

Principles of Technology I 9811
Principles of Technology II 9812

Related Postsecondary Programs:

Aeronautics
Automotive
Electronics Technology
Electrical Engineering
Engineering Technology
Mechanical Engineering
Science

Laboratory Science Credit:

Principles of Technology is an approved laboratory science course equivalent to Applied Physics. The program can be counted as a laboratory science both years. However, the second year (9812) is to be used as a science elective only when the student earns four science credits between grades 9 and 12.

Principles of Technology I 9811 (36 weeks)

Grade Level: 10 or 11 Prerequisite: None

Students in this single-period laboratory science course apply physics and math principles through a unified systems approach for a broad knowledge base of the principles underlying modern technical systems. As a foundation for more education and training in advanced technology career paths, the "principles and systems" approach ensures career flexibility as machines and technology advance. Instruction covers seven technical principles: force, work, rate, resistance, energy, power, and force transformers, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems in high-tech equipment.

Note: Principles of Technology I 9811 is approved as a laboratory science offering.

Principles of Technology II 9812 (36 weeks)

Grade Level: 11 or 12 Prerequisite: Principles of Technology I

Students continue to apply physics and math principles through a unified systems approach for a broad knowledge base of the principles underlying modern technical systems. As a foundation for more education and training in advanced technology career paths, the "principles and systems" approach ensures career flexibility as machines and technology advance. This single-period laboratory course covers seven technical principles: momentum, waves, energy converters, transducers, radiation, optical systems, and time constants, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems in high-tech equipment.

Note: Principles of Technology II 9812 may be counted as an elective only.

Special Programs

Description: See course descriptions.

CIP Code: 21.0101

Suggested Grade Level: Ungraded

Prerequisites: None

Approved Courses:
Careers and You 8475
Industrial Occupational Exploration 8473/8472
Vocational Occupational Exploration--Disadvantaged 8469
Vocational Occupational Exploration--Disabled 8471

Related Postsecondary Programs: N/A

Careers and You 8475 (9, 18, or 36 weeks)

Grade Level: 5 or 6 Prerequisite: None

Elementary or middle school students may enroll in this one-period-per-day course prior to taking exploratory courses. They investigate the 15 career clusters designated by the U.S. Office of Education by focusing on four major areas:

- Understanding oneself in relationship to work
- Understanding and simulating the work styles of people (mechanical, conventional, enterprising, social, investigative, and creative)
- Identifying and simulating selected careers
- Planning for future exploratory courses or activities.

Vocational Ocupational Exploration—Disadvantaged 8469 (36 weeks)

Grade Level: Ungraded Prerequisite: None

This laboratory course is designed for economically or academically disadvantaged students who have been vocationally assessed as having an aptitude for and interest in an industrial or craft career. Typically, these students are of normal or above intelligence but fail to achieve in the regular school environment. This offering creates an educational environment that encourages these students to remain in school and return to the regular academic or vocational program; however, those who drop out of school will have received experiences and training facilitating entry into the world of work as productive citizens.

Because of the wide variations in individual and community needs throughout the state, the Technology Education program for the disadvantaged consists primarily of locally developed content and objectives. Student organization activities are integrated into the instruction.

Vocational Ocupational Exploration—Disabled 8471 (36 weeks)

Grade Level: Ungraded Prerequisite: None

This course code is reserved for programs designed to provide technical exploratory and self-development activities for students with mental and physical disabilities that prevent them from succeeding in the regular school environment. The program is locally designed for the individual student and forms the basis of the student's individualized education plan (IEP).

Technology Education
Approved Program Completer Options

Programs Courses and Codes	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Communication and Information Technology Program Communication Systems (8418/8415) Computing Systems (8420/8421) Graphic Communications (8494/8458)	Two courses/experiences:* Communication Systems (8418/8415) followed by Computing Systems (8420/8421) **or** Graphic Communications (8494/8458)	Minimum requirements **and** Principles of Technology I (9811) or Electronics Technology I (8416)
Control Technology Program Electronics Technology I (8417/8416) Electronics Technology II (8412) Power and Transportation (8444/8445) Energy and Power (8495/8448)	Two courses/experiences:* Power and Transportation (8444/8445) followed by Energy and Power (8495/8448) **or** Electronics Technology I (8417/8416) followed by Electronics Technology II (8412)	Minimum requirements **and** Principles of Technology I (9811)
Design and Technology Program Technology Foundations (8402/8403) Technology Transfer (8404/8405) Technology Assessment (8406/8407)	Two courses/experiences:* Technology Foundations (8402/8403) followed by Technology Transfer (8404/8405) **or** Technology Assessment (8406/8407)	Minimum requirements **and** One additional approved 36-week course

*Any two 36-week courses (or semester equivalents that equal two 36-week courses) in the same program sequence must be taken.

Technology Education Approved Program Completer Options (continued)

Programs Courses and Codes	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
Production Technology Program Production Systems (8446/8447) Materials and Processing (8478/8433) Construction (8432/8431) Manufacturing (8426/8425)	Two courses/experiences:* Materials and Processes (8478/8433) **or** Production Systems (8446/8447) followed by Construction (8432/8431) **or** Manufacturing (8426/8425)	Minimum requirements **and** Principles of Technology I (9811) **or** Computing Systems (8421)
Technical Design and Illustration Basic Technical Drawing/Design/CAD (8434/8435) Engineering Drawing/Design/CAD (8493/8436) Architectural Drawing/Design/CAD (8492/8437)	Two courses/experiences:* Basic Techical Drawing/Design (8434/8435) followed by Engineering Drawing/Design (8493/8436) **or** Architectural Drawing/Design (9492/8437)	Minimum requirements **and** Principles of Technology (9811) **or** Computing Systems (8421)
Pre-Engineering Program Introduction to Engineering (8490) Research and Development Engineering (8491)	Two courses/experiences	Minimum requirements **and** Basic Technical Drawing/Design/CAD (8435) **or** One additional approved 36-week course
Principles of Technology Principles of Technology I (9811) Principles of Tecnology II (9812)	Two courses/experiences	Minimum requirements **and** One additional approved 36-week course

*Any two 36-week courses (or semester equivalents that equal two 36-week courses) in the same program sequence must be taken.

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Trade and Industrial Education in Virginia

Overview

Trade and Industrial Education programs prepare students with occupational skills, knowledge, attitudes, and work habits to become employed and progress satisfactorily in the trade and industrial field as skilled or semi-skilled craftspersons.

The basic competencies required for employment in a given trade area determine the content of each local instructional program. The teacher, in cooperation with supervisors, advisory committees, and other persons who have knowledge of the trade, develops the curriculum based upon the needs of students and opportunities for employment.

Types of Programs

Trade and Industrial Education offers occupational preparation through the following types of programs.

- **In-school, laboratory-type programs**

  Students receive comprehensive instruction through the use of facilities and equipment that simulate industry in every detail. The instructor, who has industrial experience and is qualified at the journey level in his or her trade area, offers training in a specific trade area such as auto mechanics, carpentry, drafting, or electricity. Cluster programs of related trade areas (e.g., building trades, which provides instruction in carpentry, electricity, plumbing, and masonry) are included in this group. These programs usually meet for two or three class periods each day.

- **Cooperative programs**

  The Industrial Cooperative Training (ICT) program differs from the laboratory-type program in that students receive instruction in the manipulative skill processes of their selected occupation through on-the-job training.

  Each student in an ICT program may be employed in a different trade area. The teacher-coordinator and the student's employer design a training plan to develop the student's entry-level skills. The teacher coordinates the student's occupational experiences with a study of related technical information in the ICT classroom. Students enrolled in a program of this type attend one-hour ICT classes and are employed for at least three hours during the regular school day.

ICT students may complete their supervised ocupational experience before school, after school, and on weekends or evenings. The teacher-coordinator requires scheduling flexibility to permit on-site supervision of students during the working hours.

Students who fulfill both the related instruction and the supervised occupational experience requirements of the two ICT courses (ICT II and III) or the Senior Intensified ICT program will be classified as program completers **and may receive a maximum of three credits (i.e., one credit for classroom activities and two credits for on-the-job experiences).**

Program Options

Eight Trade and Industrial Education program options meet the challenge of change in instructional technology, the requirements for high school graduation, and the need for flexibility in scheduling.

- **Option 1:** Three periods per day for two years.
- **Option 2:** Two periods per day for three years.
- **Option 3:** One period per day for one year; two periods per day for one year; and three periods per day for one year.
- **Option 4:** A cluster program referring to a family of occupations such as the building trades, including carpentry, electricity, masonry, and plumbing. Level I, the first year trade preparatory curriculum, rotates students through an occupational cluster of four existing T&I programs on a one-hour basis for a nine-week period, or three programs for a twelve-week period. For reporting purposes, a student entering a specific cluster at the beginning of the school year will be reported as enrolled in Level I of that subject area for the entire school year.

  After completion of the first-level introductory course, students select one of the concentrated building trades courses--carpentry, electricity, masonry, or plumbing. The second and third year of the total cluster program, Levels II and III, are offered in two-hour blocks each year. Because the instructor will have the three preparations required to teach all three levels, a planning period is essential to the success of this program.

- ❖ **Option 5:** Three-period block per day for one year. Preparation for certain trade and industrial occupations such as bricklaying, residential wiring, and public safety can be accomplished with this schedule. Other programs, as determined by occupational or craft committees and instructors in these occupational areas, may also qualify for this option. Examples include automotive servicing, culinary arts, commercial sewing, upholstery, and welding.

- ❖ **Option 6:** Two-period block per day for one year; three-period block per day for one year. It is essential for the instructor to have a planning period in this situation.

- ❖ **Option 7:** Option for students who choose to develop competencies required for a sub-occupation within an occupational group. Certain programs are offered as a three-period block within a one-year time frame for preparation in a sub-occupation **within the same career field.** Technical and architectural drafting, sub-occupations within the drafting field, are examples of programs that would fall into this category.

- ❖ **Option 8:** Two periods per day for two years. This option enables students to complete a T&I program within four instructional blocks. The minimum amount of instructional time available for this program must be two instructional periods without a break at the 11th grade and at the 12th grade levels. There must be sufficient time to develop the competencies required in an occupational preparation program.

Student Organization: Vocational Industrial Clubs of America

Activities of local chapters and sections of the Vocational Industrial Clubs of America (VICA) are an integral part of the instruction in all Trade and Industrial Education programs. These activities provide opportunities for students to develop occupational skills and knowledge and encourage them to become better citizens. This part of the instructional program stresses personal leadership development and motivates students to excel in their chosen occupation.

Substitution for High School Science, Mathematics, and Practical Arts Credits

- All program completers, including students in Special Programs, are eligible for a mathematics credit in the 21-unit diploma, if approved by the local school division.

- Students who complete the following T&I programs may substitute the completion for a mathematics or science credit, if approved by the local school division:

  Air Conditioning and Refrigeration
  Barbering
  Cosmetology
  Electricity
  Electronics
  Firefighting
  Law Enforcement
  Public Safety
  Electronic Products Servicing
  Robotic Work Cell Technology.

- Completion of the ICT program is an acceptable alternative for one unit of mathematics in the 21-unit diploma, if approved by the local school division.

- Trade and Industrial Education courses meet requirements for a practical arts elective.

Trade and Industrial Education Programs by Clusters

COMMUNICATIONS AND GRAPHICS

Advertising Design
Commercial Photography
Drafting
Drafting - Architectural
Drafting - Technical
Electronic Products Servicing
Electronics Technology
Graphic Communications
Radio Communications
Robotic Work Cell Technology
Television Production

CONSTRUCTION

Bricklayer
Brick Masonry
Building Trades
Cabinetmaking
Carpentry
Carpentry/Cabinetmaking
Electricity
General Maintenance Mechanics/
Building Maintenance
Heating/Air Conditioning, and
Refrigerator
Major Appliance Repair
Residential Plumbing
Residential Wiring

METALS

Industrial Maintenance Technology
Maintenance and Repair
Metal Trades
Mine Equipment Maintenance
Precision Machining Technology
Sheet Metal
Welding, Brazing, and Soldering

PERSONAL SERVICES

Barbering
Beauty Salon Assistant
Cleaning and Pressing
Commercial Sewing
Cosmetology
Culinary Arts
Interior Decorating
Short Order Cook
Tailoring
Upholstery

PROTECTIVE SERVICES

Firefighting
Law Enforcement
Public Safety

TRANSPORTATION

Aircraft Pilot Training
Automotive Body Repair
Automotive Painter
Automotive Service Technology
Automotive Technician
Aviation Maintenance Technology
Diesel Equipment Technology
Small Engine Repair
Tune-Up Specialist

COOPERATIVE EDUCATION

Industrial Cooperative Education

SPECIAL PROGRAMS

T&I Education for the Disadvantaged
T&I Education for the Disabled

Trade and Industrial Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
COMMUNICATIONS AND GRAPHICS				
Advertising Design*				
Advertising Design I	8570	10-11	36	20
Advertising Design II	8571	11-12	36	20
Advertising Design III	8572**	12	36	20
Commercial Photography*				
Commercial Photography I	8607	10-11	36	20
Commercial Photography II	8608	11-12	36	20
Commercial Photography III	8609**	12	36	20
Drafting*				
Drafting I	8530	10-11	36	20
Drafting II	8531	11-12	36	20
Drafting III	8532**	12	36	20
Drafting - Architectural*				
Architectural Drafting	8561	11-12	36	20
Drafting - Technical*				
Technical Drafting	8560	11-12	36	20
Graphic Communications*				
Graphic Communications I	8660	10-11	36	20
Graphic Communications II	8661	11-12	36	20
Graphic Communications III	8662**	12	36	20
Electronic Products Servicing*				
Electronic Products Servicing	8619	11-12	36	20
Electronics Technology*				
Electronics Technology I	8536	10-11	36	20
Electronics Technology II	8537	11-12	36	20
Electronics Technology III	8538**	12	36	20
Robotic Work Cell Technology*				
Robotic Work Cell Technology I	8557	10-11	36	20
Robotic Work Cell Technology II	8558	11-12	36	20
Robotic Work Cell Technology III	8559**	12	36	20
Radio Communications*				
Radio Communications I	8640	10-11	36	20
Radio Communications II	8641	11-12	36	20
Radio Communications III	8642**	12	36	20
Television Production*				
Television Production I	8688	10-11	36	20
Television Production II	8689	11-12	36	20
Television Production III	8690**	12	36	20
CONSTRUCTION				
Bricklayer*				
Bricklayer	8546	11-12	36	20

*Approved program

**Used when scheduling option requires third year.

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
CONSTRUCTION (continued)				
Brick Masonry*				
Brick Masonry I	8512	10-11	36	20
Brick Masonry II	8513	11-12	36	20
Brick Masonry III	8514**	12	36	20
Building Trades*				
Building Trades I	8515	10-11	36	20
Building Trades II	8516	11-12	36	20
Building Trades III	8517**	12	36	20
Cabinetmaking*				
Cabinetmaking I	8604	10-11	36	20
Cabinetmaking II	8605	11-12	36	20
Cabinetmaking III	8606**	12	36	20
Carpentry*				
Carpentry I	8601	10-11	36	20
Carpentry II	8602	11-12	36	20
Carpentry III	8603**	12	36	20
Carpentry - Cabinetmaking *				
Carpentry - Cabinetmaking I	8518	10-11	36	20
Carpentry - Cabinetmaking II	8519	11-12	36	20
Carpentry - Cabinetmaking III	8520**	12	36	20
Electricity*				
Electricity I	8533	10-11	36	20
Electricity II	8534	11-12	36	20
Electricity III	8535**	12	36	20
General Maintenance Mechanics/ Building Maintenance*				
General Maintenance Mechanics I	8590	10-11	36	20
General Maintenance Mechanics II	8591	11-12	36	20
General Maintenance Mechanics III	8592**	12	36	20
Heating/Air Conditioning, and Refrigeration*				
Heating/Air Conditioning and Refrigeration I	8503	10-11	36	20
Heating/Air Conditioning and Refrigeration II	8504	11-12	36	20
Heating/Air Conditioning and Refrigeration III	8505	12	36	20
Major Appliance Repair*				
Appliance Repair I	8616	10-11	36	20
Appliance Repair II	8617	11-12	36	20
Appliance Repair III	8618**	12	36	20
Residential Plumbing*				
Residential Plumbing I	8551	10-11	36	20
Residential Plumbing II	8552	11-12	36	20
Residential Plumbing III	8553**	12	36	20
Residential Wiring*				
Residential Wiring	8545	11-12	36	20

*Approved program

**Used when scheduling option requires third year.

Trade and Industrial Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
METALS				
Industrial Maintenance Technology*				
Industrial Maintenance Technology I	8575	10-11	36	20
Industrial Maintenance Technology II	8576	11-12	36	20
Industrial Maintenance Technology III	8577**	12	36	20
Maintenance and Repair*				
Maintenance and Repair I	8542	10-11	36	20
Maintenance and Repair II	8543	11-12	36	20
Maintenance and Repair III	8544**	12	36	20
Metal Trades *				
Metal Trades I	8548	10-11	36	20
Metal Trades II	8549	11-12	36	20
Metal Trades III	8550**	12	36	20
Mine Equipment Maintenance*				
Mine Machinery Repair I	8580	10-11	36	20
Mine Machinery Repair II	8581	11-12	36	20
Mine Machinery Repair III	8582**	12	36	20
Precision Machining Technology*				
Precision Machining Technology I	8539	10-11	36	20
Precision Machining Technology II	8540	11-12	36	20
Precision Machining Technology III	8541**	12	36	20
Welding, Brazing, and Soldering*				
Welding I	8672	10-11	36	20
Welding II	8673	11-12	36	20
Welding III	8674**	12	36	20
PERSONAL SERVICES				
Barbering*				
Barbering I	8509	10-11	36	20
Barbering II	8510	11-12	36	20
Barbering III	8511**	12	36	20
Beauty Salon Assistant*				
Beauty Salon Assistant I	8610	10-11	36	20
Beauty Salon Assistant II	8611	11-12	36	20
Beauty Salon Assistant III	8612**	12	36	20
Commercial Sewing*				
Commercial Sewing I	8524	10-11	36	20
Commercial Sewing II	8525	11-12	36	20
Commercial Sewing III	8526**	12	36	20
Cosmetology*				
Cosmetology I	8527	10-11	36	20
Cosmetology II	8528	11-12	36	20
Cosmetology III	8529**	12	36	20

*Approved program

**Used when scheduling option requires third year.

Trade and Industrial Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
PERSONAL SERVICES (continued)				
Culinary Arts*				
Culinary Arts I	8521	10-11	36	20
Culinary Arts II	8522	11-12	36	20
Culinary Arts III	8523**	12	36	20
Short Order Cook (SIP)	8691	12	36	20
Tailoring*				
Tailoring I	8669	10-11	36	20
Tailoring II	8670	11-12	36	20
Tailoring III	8671**	12	36	20
Upholstering*				
Upholstery I	8685	10-11	36	20
Upholstery II	8686	11-12	36	20
Upholstery III	8687**	12	36	20
PROTECTIVE SERVICES				
Firefighting*				
Firefighting I	8705	10-11	36	20
Firefighting II	8706	11-12	36	20
Firefighting III	8707**	12	36	20
Law Enforcement*				
Law Enforcement I	8702	10-11	36	20
Law Enforcement II	8703	11-12	36	20
Law Enforcement III	8704**	12	36	20
Public Safety*				
Public Safety I	8700	11-12	36	20
Public Safety II	8701***	12	36	20
TRANSPORTATION				
Automotive Body Repair*				
Auto Body Repair I	8676	10-11	36	20
Auto Body Repair II	8677	11-12	36	20
Auto Body Repair III	8678**	12	36	20
Automotive Painter*				
Auto Painter	8679	11-12	36	20
Automotive Service Technology*				
Auto Service Technology I	8506	10-11	36	20
Auto Service Technology II	8507	11-12	36	20
Auto Service Technology III	8508**	12	36	20
Tune-Up Specialist (SIP)	8680	12	36	20
Automotive Servicing*				
Automotive Servicing I	8710	10-11	36	20
Automotive Servicing II	8711	11-12	36	20
Automotive Servicing III	8712**	12	36	20

*Approved program

**Used when scheduling option requires third year.

***Used when scheduling option requires second year.

Trade and Industrial Education Programs and Courses

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
TRANSPORTATION (continued)				
Aviation Maintenance Technology*				
Aviation Maintenance Technology I	8728	11	18	20
Aviation Maintenance Technology II	8729	12	18	20
Aircraft Pilot Training*				
Aircraft Pilot Training I	8731	11	18	20
Aircraft Pilot Training II	8732	12	18	20
Diesel Equipment Technology*				
Diesel Equipment Technology I	8613	10-11	36	20
Diesel Equipment Technology II	8614	11-12	36	20
Diesel Equipment Technology III	8615**	12	36	20
Small Engine Repair*				
Small Engine Repair I	8725	10-11	36	20
Small Engine Repair II	8726	11-12	36	20
Small Engine Repair III	8727**	12	36	20
COOPERATIVE EDUCATION				
Industrial Cooperative Training (ICT)*				
Industrial Cooperative Training I (Non Co-op)	8901	10	36	15-20
Industrial Cooperative Training II	8902	11-12	36	15-20
Industrial Cooperative Training III	8902	12	36	15-20
Industrial Cooperative Training (SIP)	8904	12	36	20
SPECIAL PROGRAMS				
Special Programs for T&I				
T&I Education for the Disadvantaged	8625			15
T&I Education for the Disabled	8627			10

*Approved program

**Used when scheduling option requires third year.

Communications and Graphics Cluster

In this cluster, students acquire knowledge and skills necessary for entry-level employment and further education in the fields of electronics and graphic communications.

Advertising Design

Description: Students prepare for job entry at a semi-skilled level as advertising artists, fashion illustrators, and technical illustrators.

CIP Code: 50.0402

Approved Courses:	Prerequisites:
Advertising Design I (8570)	None
Advertising Design II (8571)	Advertising Design I
Advertising Design III (8572)	Advertising Design II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:

Advertising
Commercial Art
Drafting
Fashion Design
Fashion Illustrator

Commercial Photography

Description: Students learn to operate air brushes, cameras, meters, and other photographic equipment. Instructional topics include composition and color dynamics, contact printing, enlarging and developing film, and processing microfilm.

CIP Code: 50.0406

Approved Courses:	**Prerequisites:**
Commercial Photography I (8607)	None
Commercial Photography II (8608)	Commercial Photography I
Commercial Photography III (8609)	Commercial Photography II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Photography

Drafting

Description: Students learn theory and the manipulative skills necessary to produce complete and accurate drawings based on the ideas and sketches of engineers, architects, and designers. They design and prepare mechanical, structural, and architectural plans.

CIP Code: 48.0101

Approved Courses:	**Prerequisites:**
Drafting I (8530)	None
Drafting II (8531)	Drafting I
Drafting III (8532)	Drafting II

Suggested Grade Level:

I	11 or 12
II	11 or 12
III	12

Related Postsecondary Programs:
Drafting
Engineering Design

Note: Completion of this program may prepare students for apprenticeships in a variety of drafting occupations. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Drafting--Architectural

Description: Architectural Drafting is a one-year program scheduled in a triple-period block in which students learn architectural drafting methods and study architectural styles.

CIP Code: 48.0102

Approved Courses:	Architectural Drafting (8561)	**Prerequisites:** None

Suggested Grade Level: 11 or 12

Related Postsecondary Programs: Drafting

Note: Completion of this program may prepare students for apprenticeships in a variety of drafting occupations. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Drafting--Technical

Description: Technical Drafting is a one-year class scheduled in a triple-period block in which students learn techniques of lettering, orthographic projection procedures, and dimensioning techniques. They draw auxiliary views, working drawings, and pictorial representations.

CIP Code: 48.0105

Approved Courses:	Technical Drafting (8560)	**Prerequisites:** None

Suggested Grade Level: 11 or 12

Related Postsecondary Programs: Drafting

Note: Completion of this program may prepare students for apprenticeships in a variety of drafting occupations. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Graphic Communications

Description: Students learn to design and execute layouts and illustrations for advertising displays and instructional manuals. Instruction in all phases of offset printing, layout, composition, presswork and binding, flexography, lithography, photoengraving, and other graphic arts related to the printing industry is included.

CIP Code: 48.0201

Approved Courses:	**Prerequisites:**
Graphic Communications I (8660)	None
Graphic Communications II (8661)	Graphic Communications I
Graphic Communications III (8662)	Graphic Communications II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Printing

Note: Completion of this program may prepare students for apprenticeships in the printing industry. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Electronic Products Servicing

Description: Electronic Products Servicing is a one-year program scheduled as a triple-period block and offered to juniors and seniors. Students study basic electricity and electronics, transmitters, power supplies, and receivers relevant to consumer electronic products as they practice electronic product troubleshooting, servicing, and safety procedures.

CIP Code: 47.0199

Approved Courses:	**Prerequisites:**
Electronic Product Servicing (8619)	None

Suggested Grade Level: 11 or 12

Related Postsecondary Programs: Electronics Technology

Note: Completion of this program may prepare students for apprenticeships in a variety of occupations related to electricity and electronics. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Electronics Technology

Description: Students learn to assemble, install, operate, maintain, repair, and troubleshoot electrical/electronic equipment used in industry and manufacturing. Digital and computer circuitry, synchro- and servomechanisms, mechanical power transfer systems, three-phase alternate current and electronic wave-shaping are included in this program.

CIP Code: 47.0101

Approved Courses:	**Prerequisites:**
Electronics Technology I (8536)	None
Electronics Technology II (8537)	Electronics Technology I
Electronics Technology III (8538)	Electronics Technology II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Electricity/Electronics

Note: Completion of this program may prepare students for apprenticeships in a variety of occupations related to electricity and electronics. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Robotic Work Cell Technology

Description: To be developed

CIP Code: 15.0405

Approved Courses:		**Prerequisites:**
	Robotic Work Cell Technology I (8557)	None
	Robotic Work Cell Technology II (8558)	RWCT I
	Robotic Work Cell Technology III (8559)	RWCT II

Suggested Grade Level:		
	I	10 - 11
	II	11 - 12
	III	12

Related Postsecondary Programs:
Electromechanical Technology
Electronics
Mechanical Engineering

Note: Completion of this program may prepare students for apprenticeships in occupations related to electronics or manufacturing. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Radio Communications

Description: Students learn basic electricity and electronics, including all aspects of safety as well as related mathematics. Activities provide the skills for obtaining a radio-telephone operator's license. Students learn practices related to the management and operation of a broadcasting station.

CIP Code: 10.0104

Approved Courses:	**Prerequisites:**
Radio Communications I (8640)	None
Radio Communications II (8641)	Radio Communications I
Radio Communications III (8642)	Radio Communications II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Radio and Television

Television Production

Description: Students learn to operate equipment such as TV cameras, telecines, video tape recorders, microphones, audio mixers, and audio/video editing systems. They practice skills related to production, direction, and scripting of programs and set design and construction. Students also study control room procedures and responsibilities.

CIP Code: 10.0104

Approved Courses:	**Prerequisites:**
Television Production I (8688)	None
Television Production II (8689)	Television Production I
Television Production III (8690)	Television Production II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Radio and Television

Construction Cluster

In this cluster, students acquire knowledge and skills necessary for entry-level employment and further education within the construction industry. Programs focus on the construction, maintenance, and servicing of buildings and their systems and components.

Bricklayer

Description: Students enrolled in this one-year triple-period program learn fundamental skills associated with laying block and brick.

CIP Code: 46.0101

Approved Courses: Bricklaying (8546)

Prerequisites: None

Suggested Grade Level: 11 or 12

Related Postsecondary Programs: Building

Note: Completion of this program may prepare students for apprenticeships in brick and stone masonry. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Brick Masonry

Description: Students learn to use hand tools such as trowels, levels, and chisels and power tools such as concrete mixers to lay brick, concrete block, tile, and related materials.

CIP Code: 46.0101

Approved Courses:	**Prerequisites:**
Brick Masonry I (8512)	None
Brick Masonry II (8513)	Brick Masonry I
Brick Masonry III (8514)	Brick Masonry II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Building

Note: Completion of this program may prepare students for apprenticeships in brick and stone masonry. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Building Trades

Description: This group of instructional programs prepares students to erect, install, maintain, and repair buildings, highways, airports, missile sites, and other structures using materials such as metal, wood, stone, brick, glass, concrete, and composition substances. Students develop skills in estimating costs; cutting, fastening, and fitting various materials; using hand and power tools; and following technical specifications and blueprints.

CIP Code: 46.9999

Approved Courses:	**Prerequisites:**
Building Trades I (8515)	None
Building Trades II (8516)	Building Trades I
Building Trades III (8517)	Building Trades II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Building

Note: Completion of this program may prepare students for apprenticeships in a variety of construction and maintenance occupations. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Cabinetmaking

Description: Students learn to engage in the mass production of window frames, molding, trim, panels, store fixtures, kitchen cabinets, office equipment, and other products. They practice tasks in cutting, shaping, assembling, and refinishing articles; installing hinges, catches, drawer pulls, and other hardware; and planning and drafting layouts.

CIP Code: 48.0703

Approved Courses:	**Prerequisites:**
Cabinetmaking I (8604)	None
Cabinetmaking II (8605)	Cabinetmaking I
Cabinetmaking III (8606)	Cabinetmaking II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:
Furniture and Woodworking
Furniture Reconstruction

Note: Completion of this program may prepare students for apprenticeships in carpentry and cabinetmaking. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Carpentry

Description: Students lay out, fabricate, erect, install, and repair wooden structures and fixtures, using hand and power tools. The program includes instruction in common systems of framing, construction materials, estimating, and blueprint reading.

CIP Code: 46.0201

Approved Courses:	**Prerequisites:**
Carpentry I (8601)	None
Carpentry II (8602)	Carpentry I
Carpentry III (8603)	Carpentry II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Building

Note: Completion of this program may prepare students for apprenticeships in carpentry and cabinetmaking. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Carpentry - Cabinetmaking

Description: This combination approach includes learning experiences in both carpentry and cabinetmaking to meet the needs of students who have interests and abilities in both occupations. Small contracting firms or contractors in rural areas usually prefer to employ individuals with entry-level skills in more than one occupation identified in the building trades industry. Many of the skills and much of the theory are transferable from these occupations to others.

CIP Code: 48.0799

Approved Courses:	**Prerequisites:**
Carpentry - Cabinetmaking I (8518)	None
Carpentry - Cabinetmaking II (8519)	Carpentry - Cabinetmaking I
Carpentry - Cabinetmaking III (8520)	Carpentry - Cabinetmaking II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:

Building
Woodworking
Furniture Reconstruction
Furniture

Note: Completion of this program may prepare students for apprenticeships in carpentry and cabinetmaking. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Electricity

Description: Students develop skills in the installation, operation, maintenance, and repair of residential, commercial, and industrial electrical systems. They also study dc and ac motors, controls, and electrical-distribution panels.

CIP Code: 46.0302

Approved Courses:	Prerequisites:
Electricity I (8533)	None
Electricity II (8534)	Electricity I
Electricity III (8535)	Electricity II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Program: Electricity/Electronics

Note: Completion of this program may prepare students for apprenticeships in a variety of occupations related to electricity and electronics. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

General Maintenance Mechanics/Building Maintenance

Description: Students learn to service a variety of structures including commercial and industrial buildings and mobile homes by practicing basic maintenance and repair skills related to the air conditioning, heating, plumbing, electrical, and other mechanical systems.

CIP Code: 46.0401

Approved Courses:	**Prerequisites:**
General Maintenance Mechanics I (8590)	None
General Maintenance Mechanics II (8591)	General Maintenance Mechanics I
General Maintenance Mechanics III (8592)	General Maintenance Mechanics II

Suggested Grade Level:	
I	10 or 11
II	11 or 12
III	12

Related Postsecondary Courses: None

Note: Completion of this program may prepare students for apprenticeships in the field of building maintenance. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Air Conditioning and Refrigeration Mechanics, General

Description: This instructional program prepares students to install, repair, and maintain the operating conditions of heating, air conditioning, and refrigeration systems.

CIP Code: 47.0201

Approved Courses:	Prerequisites:
Air Conditioning and Refrigeration I (8503)	None
Air Conditioning and Refrigeration II (8504)	Air Conditioning and Refrigeration I
Air Conditioning and Refrigeration III (8505)	Air Conditioning and Refrigeration II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Air Conditioning and Refrigeration

Note: Completion of this program may prepare students for apprenticeships in occupations related to heating, air conditioning, and refrigeration systems. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Major Appliance Repair

Description: Students learn the repair, installation, and service of major appliances such as stoves, refrigerators, dryers, water heaters, washers, and dishwashers.

CIP Code: 47.0106

Approved Courses:		**Prerequisites:**
	Appliance Repair I (8616)	None
	Appliance Repair II (8617)	Appliance Repair I
	Appliance Repair III (8618)	Appliance Repair II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Appliance Servicing

Note: Completion of this program may prepare students for apprenticeships in a variety of occupations related to appliance and electronic product servicing. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Residential Plumbing

Description: Students learn to assemble, install, and repair pipes, fittings, and fixtures of heating, water, and drainage systems, according to specifications and plumbing codes.

CIP Code: 46.0501

Approved Courses:	**Prerequisites:**
Residential Plumbing I (8551)	None
Residential Plumbing II (8552)	Residential Plumbing I
Residential Plumbing III (8553)	Residential Plumbing II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Building

Note: Completion of this program may prepare students for apprenticeships in a variety of occupations related to plumbing and pipefitting. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Residential Wiring

Description: Residential Wiring, a one-year program, is a triple-period class offered to juniors and seniors. Students learn basic electrical terms, use of the National Electrical code, and circuit fundamentals. Students develop skills in estimating cost of labor and materials and wiring single-family dwellings.

CIP Code: 46.0302

Approved Courses: Residential Wiring (8545)

Prerequisites: None

Suggested Grade Level: 11 or 12

Related Postsecondary Programs: Electricity/Electronics

Note: Completion of this program may prepare students for apprenticeships in a variety of occupations related to electricity and electronics. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Metals Cluster

In this cluster, students acquire knowledge and skills necessary for entry-level employment and further education in occupations involving the use of metals. Programs focus on the forming, shaping, assembly, testing, and maintenance of machines and other metal parts and structures.

Industrial Maintenance Technology

Description: This program focuses on the adjustment, maintenance, part replacement, and repair of tools, equipment, and machines used in industry, including hydraulic and pneumatic systems.

CIP Code: 47.0399

Approved Courses:	Prerequities:
Industrial Maintenance Technology I (8575)	None
Industrial Maintenance Technology II (8576)	IMT I
Industrial Maintenance Technology III (8577)	IMT II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:

Mechanical Engineering Technology
Air Conditioning and Refrigeration
Electricity/Electronics
Welding

Note: Completion of this program may prepare students for apprenticeships in machine maintenance and repair. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Maintenance and Repair

Description: This combination program prepares students to adjust, maintain, and replace parts and to repair tools, equipment, and machines.

CIP Code: 47.0301

Approved Courses:	**Prerequisites:**
Maintenance and Repair I (8542)	None
Maintenance and Repair II (8543)	Maintenance and Repair I
Maintenance and Repair III (8544)	Maintenance and Repair II

Suggested Grade Level:	
I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:
Air Conditioning and Refrigeration
Appliance Servicing
Industrial Engineering Technology
Mechanical Engineering Technology

Note: Completion of this program may prepare students for apprenticeships in machine maintenance and repair. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Metal Trades

Description: Students work with materials that are cast, formed, shaped, molded, heat-treated, cut, twisted, pressed, fused, or stamped. Instruction includes the planning, manufacturing, assembling, testing, and repairing of mechanisms, machines, and structures.

CIP Code: 48.0599

Approved Courses:	Prerequisites:
Metal Trades I (8548)	None
Metal Trades II (8549)	Metal Trades I
Metal Trades III (8550)	Metal Trades II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Sheet Metal

Note: Completion of this program may prepare students for apprenticeships in the occupation of sheet metal worker or machinist. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Mine Equipment Maintenance

Description: Students learn to maintain, repair, and adjust mining equipment and machinery such as continuous mines, shuttle cars, air compressors, and haulage equipment. They develop skills in testing, adjusting, and repairing pneumatc and hydraulic systems; attaching supplemental equipment such as hoses, valves, gates, vibration equipment, and mechanical, electrical, or electronic control devices; and repairing, maintaining, and installing electronic motors, switchboards, controls, fans, and starting devices.

CIP Code: 47.0304

Approved Courses:	**Prerequisites:**
Mine Machinery Repair I (8580)	None
Mine Machinery Repair II (8581)	Mine Machinery Repair I
Mine Machinery Repair III (8582)	Mine Machinery Repair II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Mining

Note: Completion of this program may prepare students for apprenticeships in industrial machine maintenance and repair. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Precision Machining Technology

Description: Students learn to shape metal parts on machines such as lathes, grinders, drill presses, milling machines, and shapers. They may also specialize in the use of one machine tool. Students learn to perform computations related to work dimensions; test feeds and speeds of machines, using precision measuring instruments such as layout tools, micrometers, and gauges; machine and heat-treat various metals; and lay out machine parts.

CIP Code: 48.0503

Approved Courses:	Prerequisites:
Precision Machining Technology I (8539)	None
Precision Machining Technology II (8540)	PMT I
Precision Machining Technology III (8541)	PMT II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Mechanical Engineering Technology

Note: Completion of this program may prepare students for apprenticeships in machinist occupations. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Welding, Brazing, and Soldering

Description: Students learn to use gases and/or welding processes and to braze and solder metal parts according to diagrams, blueprints, or written specifications.

CIP Code: 48.0508

Approved Courses:	**Prerequisites:**
Welding I (8672)	None
Welding II (8673)	Welding I
Welding III (8674)	Welding II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Welding

Note: Completion of this program may prepare students for apprenticeships in many occupations that require welding skills. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Personal Services Cluster

In this cluster, students acquire knowledge and skills necessary for entry-level employment and further education in the growing field of personal services. Personal services occupations are located within the food, apparel, and home furnishings industries as well as within the personal care field.

Barbering

Description: Students learn to cut, shampoo, and style hair, with special attention given to hygiene, skin and scalp diseases, and equipment sterilization. Instruction prepares students for licensing examinations.

CIP Code: 12.0402

Approved Courses:	Prerequisites:
Barbering I (8509)	None
Barbering II (8510)	Barbering I
Barbering III (8511)	Barbering II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: None identified

Beauty Salon Assistant

Description: Students who wish to assist a licensed cosmetologist in the areas of shampooing, conditioning, and draping the client in preparation of a service by a professional cosmetologist will benefit from this certificate program. Students acquire knowledge of sanitation and safety, applied product knowledge, and product application. The program emphasizes receptionist training with applied math and marketing skills.

CIP Code: 12.0499

Approved Courses:	Prerequisites:
Beauty Salon Assistant I (8610)	None
Beauty Salon Assistant II (8611)	Beauty Salon Assistant I
Beauty Salon Assistant III (8612)	Beauty Salon Assistant II

Beauty Salon Assistant (Cont)

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Cosmetology

Note: Completion of this program may prepare students for apprenticeships in cosmetology or barbering. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Commercial Sewing

Description: Students become proficient in the operation of various types of sewing machines. Instruction includes design, construction, alteration, and fitting of wearing apparel.

CIP Code: 20.0303

Approved Courses:	**Prerequisites:**
Commercial Sewing I (8524)	None
Commercial Sewing II (8525)	Commercial Sewing I
Commercial Sewing III (8526)	Commercial Sewing II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:

Textile Management
Fashion Design

Cosmetology

Description: Cosmetology is the study of hair, skin, and nails and their related care. Students study and prepare in a clinical lab setting, using mannequins and live models for manipulative skill practice.

The program emphasizes safety and sanitation, communication, and management skills. Related areas of study include psychology, ethics, and presentation of a professional image. Competency completions prepare the student for the Virginia Board of Cosmetology licensing exam.

CIP Code: 12.0403

Approved Courses:	**Prerequisites:**
Cosmetology I (8527)	None
Cosmetology II (8528)	Cosmetology I
Cosmetology III (8529)	Cosmetology II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Cosmetology

Culinary Arts

Description: Students are prepared for job entry at the semi-skilled level for food service occupations. Instructional areas include nutrition, handling and storing of food, sanitation, and the microbiology of food spoilage.

CIP Code: 12.0599

Approved Courses:	Prerequisites:
Culinary Arts I (8521)	None
Culinary Arts II (8522)	Culinary Arts I
Culinary Arts III (8523)	Culinary Arts II
Short Order Cook—SIP (8691)	None

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12
SIP	12

Culinary Arts (Cont)

Related Postsecondary Programs: Hotel-Restaurant-Institutional Management

Note: Completion of this program may prepare students for apprenticeships in the hospitality and food service industries. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Tailoring

Description: Tailoring includes training in the fabrication and alternation, by hand and machines, of all types of garments for men, women, and children.

CIP Code: 20.0305

Approved Courses:	Prerequisites:
Tailoring I (8669)	None
Tailoring II (8670)	Tailoring I
Tailoring III (8671)	Tailoring II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: None identified

Note: Completion of this program may prepare students for apprenticeships in the apparel industry. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Upholstering

Description: Students learn all aspects of upholstering furniture, automobile seats, caskets, and mattresses and bedsprings. They study installing, repairing, arranging, and securing springs, filler, padding, and covering material of mattresses and bedsprings; cutting, sewing, and trimming material; filling, tufting, and buttoning cushions; and refinishing wood.

CIP Code: 48.0303

Approved Courses:	Prerequisites:
Upholstery I (8685)	None
Upholstery II (8686)	Upholstery I
Upholstery III (8687)	Upholstery II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:

Furniture
Textile Management
Interior Design

Note: Completion of this program may prepare students for apprenticeships in fields related to commercial sewing and interior furnishings. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Protective Services Cluster

In this cluster, students acquire knowledge and skills necessary for entry-level employment and further education in the field of public and private safety and protection.

Firefighting

Description: Students learn to fight fires and control the outbreak of fire. Instruction includes fire department organization; use of various kinds of equipment such as extinguishers, pumps, hoses, ropes, ladders, gas masks, hydrants, and standpipe and sprinkler systems; methods of entry and rescue; salvage practices and equipment; and fire and arson inspection and investigation techniques.

CIP Code: 43.0203

Approved Courses:	Prerequisites
Firefighting I (8705)	None
Firefighting II (8706)	Firefighting I
Firefighting III (8707)	Firefighting II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Fire Science

Law Enforcement

Description: Students learn the theory, principles, and techniques of developing, administering, and managing services for the safety and protection of people and property.

Law Enforcement is recommended as a one-year course under Option 5.

CIP Code: 43.0107

Approved Courses:	**Prerequisites:**
Law Enforcement I (8702)	None
Law Enforcement II (8703)	Law Enforcement I
Law Enforcement III (8704)	Law Enforcement II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs:

Law Enforcement
Criminal Justice
Corrections

Public Safety

Description: Students learn basic procedures related to law enforcement and firefighting occupations, including emergency medical services, traffic control, safety, crowd control, and fire prevention technology. Public Safety I may be offered as a single-year, triple-period course in Grade 10, 11, or 12.

CIP Code: 43.0109

Approved Courses:		**Prerequisites**
	Public Safety I (8700)	None
	Public Safety II (8701)	Public Safety I

Suggested Grade Levels:

I	10, 11, or 12
II	11 or 12

Related Postsecondary Programs:

Fire Science
Law Enforcement
Criminal Justice
Corrections
Emergency Medical Services

Transportation Cluster

In this cluster, students acquire knowledge and skills necessary for entry-level employment and further education primarily in the automotive and aircraft industries.

Automotive Body Repair

Description: Students learn to repair the body and fenders of automobiles. Instruction in body preparation for painting and finishing is included.

CIP Code: 47.0603

Approved Courses:		**Prerequisites**
	Auto Body Repair I (8676)	None
	Auto Body Repair II (8677)	Auto Body Repair I
	Auto Body Repair III (8678)	Auto Body Repair II

Suggested Grade Levels:

I	10, 11, or 12
II	11 or 12
III	12

Related Postsecondary Programs: Automotive

Note: Completion of this program may prepare students for apprenticeships in auto body manufacturing or repair. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Automotive Painter

Description: Auto Painter is a one-year, triple-period class offered to juniors and seniors. Students learn to mask, spray, and air brush automobiles. In addition, they learn to apply undercoating and practice maintenance and safety procedures.

CIP Code: 47.0603

Approved Courses: Auto Painter (8679)

Prerequisites None

Suggested Grade Level: 11 or 12

Related Postsecondary Programs: Automotive

Note: Completion of this program may prepare students for apprenticeships in auto body manufacturing or repair. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Automotive Service Technology

Description: Students learn to repair fuel, electrical, cooling, brake, drive train, and suspension systems. Instruction is given also in the adjustment and repair of individual components and systems such as radiators, transmissions, and carburetors.

CIP Code: 47.0604

Approved Courses:		**Prerequisites**
	Auto Service Technology I (8506)	None
	Auto Service Technology II (8507)	Auto Service Technology I
	Auto Service Technology III (8508)	Auto Service Technology II
	Tune-Up Specialist—SIP (8680)	None

Suggested Grade Level:		
	I	10 or 11
	II	11 or 12
	III	12
	SIP	12

Related Postsecondary Programs: Automotive

Note: Completion of this program may prepare students for apprenticeships in the automotive industry. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Automotive Servicing

Description: Students learn to make minor repairs, tune engines, and practice routine maintenance procedures. The study of electrical systems and components of the cooling system is included.

CIP Code: 47.0601

Approved Courses:	Prerequisites
Auto Servicing I (8710)	None
Auto Servicing II (8711)	Auto Servicing I
Auto Servicing III (8712)	Auto Servicing II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12
SIP	12

Related Postsecondary Programs: Automotive

Note: Completion of this program may prepare students for apprenticeships in the automotive industry. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Aviation Maintenance Technology

Description: To be developed

CIP Code: 47.0608

Approved Courses:		**Prerequisites**
	Aviation Maintenance Technology I (8728)	None
	Aviation Maintenance Technology II (8729)	Aviation Maintenance Technology I

Suggested Grade Level:

I	11
II	12

Related Postsecondary Programs: None identified

Aircraft Pilot Training

Description: To be developed

CIP Code: 49.0107

Approved Courses:		**Prerequisites**
	Aircraft Pilot Training I (8731)	None
	Aircraft Pilot Training II (8732)	Aircraft Pilot Training I

Suggested Grade Level:

I	11
II	12

Related Postsecondary Programs: None identified

Diesel Equipment Technology

Description: Students receive instruction in general maintenance and overhaul of diesel equipment. They learn to inspect, maintain, and repair tracks, wheels, brakes, operating controls, pneumatic and hydraulic systems, electrical circuitry, and engines. They practice welding and brazing techniques.

CIP Code: 47.0605

Approved Courses:	Prerequisites
Diesel Equipment Technology I (8613)	None
Diesel Equipment Technology II (8614)	Diesel Equipment Technology I
Diesel Equipment Technology III (8615)	Diesel Equipment Technology II

Suggested Grade Level:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: Heavy Equipment Technology

Note: Completion of this program may prepare students for apprenticeships in a variety of occupations related to maintenance and repair of industrial machinery or heavy equipment. For further information, contact the Virginia Department of Labor and Industry, Apprenticeship Division.

Small Engine Repair

Description: Students learn to maintain and repair small internal-combustion engines used on portable power equipment such as lawnmowers, chain saws, rotary tillers, motorcycles, and snowmobiles, and other 2- and 4-cycle engines.

CIP Code: 47.0606

Approved Courses:	**Prerequisites:**
Small Engine Repair I (8725)	None
Small Engine Repair II (8726)	Small Engine Repair I
Small Engine Repair III (8727)	Small Engine Repair II

Suggested Grade Levels:

I	10 or 11
II	11 or 12
III	12

Related Postsecondary Programs: None identified

Cooperative Education

See page 3 for general information.

Industrial Cooperative Training

Description: In Industrial Cooperative Training (ICT), students have the opportunity to prepare for employment related to the many fields within the areas of trade, industrial, or technical occupations. Each student receives on-the-job training and instruction related to his or her chosen trade area.

The ICT-SIP program can be operated only if there is a regular ICT program in existence. Only seniors having an interest in an occupational career in which entry-level skills may be learned in one year may be assigned to this program. Seniors may be assigned to ICT I or ICT II classes but are not to exceed 10% of the total enrollment of the ICT program.

CIP Code: Assigned according to training area selected by student

Approved Courses:	Prerequisites:
Industrial Cooperative Training I (optional) (8901) (Non-Cooperative)	None
Industrial Cooperative Training II (8902) (Cooperative)	None
Industrial Cooperative Training III (8903) (Cooperative)	ICT II
Industrial Cooperative Training—SIP (8904)	None

Suggested Grade Levels:

I	10
II	11 or 12
III	12
SIP	12

Related Postsecondary Programs: Depend on training area selected by student

Trade and Industrial Education Approved Program Completer Options

Communications and Graphics Cluster

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
ADVERTISING DESIGN Advertising Design I (8570) Advertising Design II (8571) Advertising Design III (8672)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
DRAFTING Drafting I (8530) Drafting II (8531) Drafting III (8532)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
ARCHITECTURAL DRAFTING Architectural Drafting	One course (3 periods min.)	One course (3 periods min.)
TECHNICAL DRAFTING Technical Drafting	One course (3 periods min.)	One course (3 periods min.)
COMMERCIAL PHOTOGRAPHY Commercial Photography I (8607) Commercial Photography II (8608) Commercial Photography III (8609)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
GRAPHIC COMMUNICATIONS Graphic Communications I ((8660) Graphic Communications II (8661) Graphic Communications III (8662)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
ELECTRONICS PRODUCTS SERVICING Electronic Products Servicing (8619)	One course (3 periods min.)	One course (3 periods min.)
ELECTRONICS TECHNOLOGY Electronics Technology I (8536) Electronics Technology II (8537) Electronics Technology III (8538)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
RADIO COMMUNICATIONS Radio Communications I (8640) Radio Communications II (8641) Radio Communications III (8642)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
ROBOTIC WORK CELL TECHNOLOGY Robotic Work Cell Technology I (8557) Robotic Work Cell Technology II (8558) Robotic Work Cell Technology III (8559)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
TELEVISION PRODUCTION Television Production I (8688) Television Production II (8689) Television Production III (8690)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)

*Used when scheduling option requires third year

TRADE AND INDUSTRIAL EDUCATION
Construction Cluster

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
BRICKLAYER Bricklayer (8546)	One course (3 periods min.)	One course (3 periods min.)
BRICK MASONRY Brick Masonry I (8512) Brick Masonry II (8513) Brick Masonry III (8514)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
BUILDING TRADES Building Trades I (8515) Building Trades II (8516) Building Trades III (8517)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
CABINETMAKING Cabinetmaking I (8604) Cabinetmaking II (8605) Cabinetmaking III (8606)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
CARPENTRY Carpentry I (8601) Carpentry II (8602) Carpentry (8603)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
CARPENTRY/CABINETMAKING Carpentry/Cabinetmaking I (8518) Carpentry/Cabinetmaking II (8519) Carpentry/Cabinetmaking III (8520)	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
ELECTRICITY Electricity I (8533) Electricity II (8534) Electricity III (8535)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
RESIDENTIAL WIRING Residential Wiring	One course (3 periods min.)	One course (3 periods min.)
GENERAL MAINTENANCE MECHANICS/BUILDING MAINTENANCE General Maintenance Mechanics/Building Maintenance I (8590) General Maintenance Mechanics/Building Maintenance II (8591) General Maintenance Mechanics/Building Maintenance III (8592)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
AIR CONDITIONING AND REFRIGERATION Air Conditioning and Refrigeration I (8503) Air Conditioning and Refrigeration II (8504) Air Conditioning and Refrigeration III (8505)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)

*Used when scheduling option requires third year

TRADE AND INDUSTRIAL EDUCATION
Construction Cluster (Cont)

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
MAJOR APPLIANCE REPAIR Major Appliance Repair I (8616) Major Appliance Repair II (8617) Major Appliance Repair III (8618)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
RESIDENTIAL PLUMBING Residential Plumbing I (8551) Residential Plumbing II (8552) Residential Plumbing III (8553)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)

Metals Cluster

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
INDUSTRIAL MAINTENANCE TECHNOLOGY Industrial Maintenance Technology I (8575) Industrial Maintenance Technology II (8576) Industrial Maintenance Technology III (8577)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
MAINTENANCE AND REPAIR Maintenance and Repair I (8542) Maintenance and Repair II (8543) Maintenance and Repair III (8544)	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
METAL TRADES Metal Trades I (8548) Metal Trades II (8549) Metal Trades III (8550)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
MINE MACHINERY REPAIR Mine Machinery Repair I (8580) Mine Machinery Repair II (8581) Mine Machinery Repair III (8582)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
PRECISION MACHINING TECHNOLOGY Precision Machining Technology I (8539) Precision Machining Technology II (8540) Precision Machining Technology III (8541)	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
SHEET METAL Sheet Metal I (8563) Sheet Metal II (8564) Sheet Metal III (8565)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
WELDING Welding I (8672) Welding II (8673) Welding III (8674)	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)

* Used when scheduling option requires third year

TRADE AND INDUSTRIAL EDUCATION
Personal Services Cluster

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
BARBERING Barbering I (8509) Barbering II (8510) Barbering III (8511)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
BEAUTY SALON ASSISTANT Beauty Salon Assistant I (8610) Beauty Salon Assistant II (8611) Beauty Salon Assistant III (8612)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
COSMETOLOGY Cosmetology I (8527) Cosmetology II (8528) Cosmetology III (8529)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
CULINARY ARTS Culinary Arts I (8521) Culinary Arts II (8522) Culinary Arts III (8523)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
SHORT ORDER COOK (SENIOR-INTENSIFIED) Short Order Cook (8691)	One course (3 periods min.)	One course (3 periods min.)
COMMERCIAL SEWING Commercial Sewing I (8524) Commercial Sewing II (8525) Commercial Sewing III (8526)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
CLEANING AND PRESSING Cleaning and Pressing I (8682) Cleaning and Pressing II (8683) Cleaning and Pressing III (8684)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
INTERIOR DESIGN Interior Design I (8593) Interior Design II (8594) Interior Design III (8595)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
TAILORING Tailoring I (8669) Tailoring II (8670) Tailoring III (8671)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
UPHOLSTERY Upholstery I (8685) Upholstery II (8686) Upholstery III (8687)	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)

*Used when scheduling option requires third year

TRADE AND INDUSTRIAL EDUCATION
Personal Services Cluster (Cont)

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
PIANO TUNING Piano Tuning I (8658) Piano Tuning II (8659)	Two courses	Two courses
SHOE REPAIRING Shoe Repairing I (8666) Shoe Repairing II (8667) Shoe Repairing III (8668)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)

Protective Services

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
FIREFIGHTING Firefighting I (8705)** Firefighting II (8706) Firefighting III (8707)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
LAW ENFORCEMENT Law Enforcement I (8702)** Law Enforcement II (8703) Law Enforcement III (8704)*	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
PUBLIC SAFETY Public Safety I (8700)** Public Safety II (8701)	One course (or two when local scheduling option requires a second year)	One course (or two when local scheduling option requires a second year)

Transportation Cluster

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
AVIATION MAINTENANCE TECHNOLOGY Aviation Maintenance Technology I (8728) Aviation Maintenance Technology II (8729)	Two courses	Two courses
AIRCRAFT PILOT TRAINING Aircraft Pilot Training I (8731) Aircraft Pilot Training II (8732)	Two courses	Two courses
AUTOMOTIVE BODY REPAIR Automotive Body Repair I (8676)** Automotive Body Repair II (8677) Automotive Body Repair III (8678)*	One course (or two when local scheduling option requires a second year)	One course (or two when local scheduling option requires a second year)

*Used when scheduling option requires third year
**3 periods minimum for one-year course

TRADE AND INDUSTRIAL EDUCATION
Transportation Cluster (Cont)

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
AUTOMOTIVE BODY REPAIR Automotive Body Repair I (8676) Automotive Body Repair II (8677) Automotive Body Repair III (8678)*	One course (or two when local scheduling option requires a second year)	One course (or two when local scheduling option requires a second year)
AUTOMOTIVE PAINTER Automotive Painter (8679)	One course (3 periods min.)	One course (3 periods min.)
AUTOMOTIVE SERVICE TECHNOLOGY Automotive Service Technology I (8506)** Automotive Service Technology II (8507) Automotive Service Technology III (8508)*	One course (or two when local scheduling option requires a second year)	One course (or two when local scheduling option requires a second year)
AUTOMOTIVE SERVICING Automotive Servicing I (8510)** Automotive Servicing II (8511) Automotive Servicing III (8512)*	One course (or two when local scheduling option requires a second year)	One course (or two when local scheduling option requires a second year)
TUNE-UP SPECIALIST (SENIOR-INTENSIFIED) Tune-Up Specialist (8680)	One course (3 periods min.)	One course (3 periods min.)
DIESEL EQUIPMENT TECHNOLOGY Diesel Equipment Technology I (8613)** Diesel Equipment Technology II (8614) Diesel Equipment Technology III (8615)*	One course (or two when local scheduling option requires a second year)	One course (or two when local scheduling option requires a second year)
SMALL ENGINE REPAIR Small Engine Repair I (8725)* Small Engine Repair II (8726) Small Engine Repair III (8727)*	One course (or two when local scheduling option requires a second year)	One course (or two when local scheduling option requires a second year)

COOPERATIVE EDUCATION

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
INDUSTRIAL COOPERATIVE TRAINING (ICT) Industrial Cooperative Training I (8901) (Non-Co-op)		
Industrial Cooperative Training II (8002) (Co-op) Industrial Cooperative Training III (8003)* (Co-op)	Two courses (or three when local scheduling option requires a third year)	Two courses (or three when local scheduling option requires a third year)
Industrial Cooperative Training-Senior Intensified (8904) (Co-op)	One course	One course

*Used when scheduling option requires third year
**3 periods minimum for one-year course

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Work and Family Studies in Virginia

Overview

The family forms the basis of Work and Family Studies just as business, industry, and marketing form the basis of other vocational education programs. Common to all vocational disciplines is the concept of work, and as one of these disciplines, Work and Family has the work of the family as its fundamental concept.

Work and Family Studies provides educational opportunities in two ways. The family component provides for young people the opportunity to prepare for work in the family enterprise. In the job component, young people explore and prepare for jobs that originate from the family enterprise. This component concerns mastering job entry-level skills, advancing in related occupations, and continuing education in postsecondary vocational or university settings.

In both components, students continue to develop and refine the basic skills of reading, writing, oral communication, and computation. In addition, they learn career development skills, employability skills, and skills related to the work of the family. Work and Family Studies places a special emphasis on the development of reasoning skills, such as distinguishing between fact and opinion and identifying problems and evaluating ways to solve them.

Program Goals

The content of all Work and Family Studies courses is directed toward the achievement of an entire set of program goals. A concern for career development, job and employability skills, the value of work and the family, and the enhancement of reading, writing, speaking, listening, computing, and reasoning skills form the basis of these program goals.

Goals of the Work and Family Studies program are to help students

- ❖ develop knowledge about the skills for work in the family enterprise and for jobs originating from the family enterprise
- ❖ explore and understand the relationship between the concepts of work and family and how to use these concepts
- ❖ become more rational and responsible in decisions and actions involving home and family.

Occupational Work and Family Studies

The occupational program provides content and learning experiences that help students

- ❖ identify the relationship of Work and Family Studies-related jobs to one another and understand their relationship to the family and to other institutions
- ❖ develop insights about their own and others' attitudes toward work
- ❖ develop the ability to work in a chosen Work and Family Studies-related occupation.

Occupational Work and Family Studies may be provided through two methods of instruction or a combination of the two. These methods include (1) simulated laboratory and classroom instruction, (2) classroom instruction and on-the-job training, or (3) simulated laboratory instruction, classroom instruction, and on-the-job training.

Simulated Laboratory Instruction

Simulated laboratory occupational courses are offered as a double and/or triple period scheduled for 36 weeks and a two-year period of time. The classes are scheduled for consecutive periods per day and for consecutive years. A double-period year offers two Carnegie units; a triple-period year offers three Carnegie units. The simulated laboratory environment should be designed with state-of-the-art equipment.

Cooperative Education Instruction

Work and Family Studies Cooperative Education, a full-time cooperative education program, is offered one period a day for 36 weeks. The program is two years in length. The student should begin on-the-job training within two weeks after the start of the school year. If a student transfers into the program from another school, the two-week deadline for placement on the job is also applicable.

For two Carnegie units, the student should be given two hours of school release time and have 405 hours of supervised work experience per school year. This experience averages two hours per day for five days a week. For a transfer student not previously enrolled in a cooperative education program, the remainder of the school year shall accommodate a minimum of 200 work hours for two credits.

For three Carnegie units, the student should be given three hours of school release time and have 540 hours of supervised work experience per school year. This experience averages three hours per day for five days a week. For a transfer student not previously enrolled in a cooperative education program, the remainder of the school year shall accommodate a minimum of 270 hours of supervised work experience for three credits.

The cooperative work experience is supervised by the Work and Family Studies teacher, and a training agreement and plan should be developed cooperatively by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and the student.

A training site approved for occupational training must be classified as an occupation requiring knowledge and skills in one or more of the following Work and Family Studies programs: child care and guidance management and services; clothing, apparel, and textile management, production, and services; food production, management, and services; home furnishings and equipment management, production, and services; and institutional, home management, and supporting services.

All students enrolled in the occupational program are encouraged to join HERO chapters of the student organization, Virginia Association, Future Homemakers of America, Inc. The Future Homemakers of America, Inc. is an integral part of the Work and Family Studies occupational program in that it contributes to employability by helping students develop personal employability skills and job-searching skills in all occupational preparation programs.

Consumer and Homemaking Education

The consumer and homemaking education program provides content and learning experiences that help students

- ❖ recognize the role of the family in society and its relationship to other institutions
- ❖ recognize the work for which the family is responsible in society
- ❖ recognize the conditions in the family and society that affect the family's ability to carry out its work
- ❖ develop the ability to help others recognize the work of the family as important.

Students have the opportunity to explore the individual development of each member of the family through the major instructional areas of child development and guidance, clothing and textiles, consumer education, family life and parenting, food and nutrition, and housing and home management (including resource management).

All courses meet five days a week, a single period per day or the equivalent thereof. Extended learning experiences, including internships, beyond the classroom environment are encouraged and are supervised by the Work and Family Studies teacher. **The satisfactory completion of two years of consumer and homemaking education is required for program completion.**

All students enrolled and those who have been enrolled previously in Work and Family Studies programs are eligible for and encouraged to join their local chapter of the Work and Family Studies student organization, Virginia Association, Future Homemakers of America, Inc. The Future Homemakers of America organization is an integral part of the program in that it extends and enriches classroom experiences by helping individuals to improve personal, family, and community living and to develop leadership skills.

Special Programs

Regular programs are modified to address the needs of special students. Some of the identified needs include opportunities for the gifted and talented, the at-risk, the disadvantaged, the disabled, and the limited English proficiency students.

Adult Education Programs

Work and Family Studies adult education programs provide continuing education for out-of-school youth and adults. These programs are designed to assist participants in their roles of home manager, wage earner, consumer, and family member.

The rapid changes in social, economic, and technological areas have prompted the need for continuing or lifelong learning. Work and Family Studies adult education offers both consumer and homemaking and occupational programs.

Consumer and Homemaking Programs
(Minimum of 12 hours per course)

Programs in consumer and homemaking adult education are considered to be supplemental in nature. They are designed to provide training for persons already engaged in the nonwage-earning occupation of homemaking or for those who have entered the labor market and need updated and upgraded training to achieve stability and advancement.

The purpose of consumer and homemaking adult education is to improve the quality of life of individuals and families. These programs address the needs and interests of people, both male and female, including those with special needs, at various stages in the life cycle. Each course meets for a minimum of 12 hours, and areas of study include the following courses:

Child Development
Clothing Management
Consumer Education and Home Management
Parenting Education
Family Life Education
Family Management Skills
Food Management and Nutrition
Housing, Home Furnishings, and Decoration
Managing the Family Income
Energy Management and Conservation for Families and Individuals
Young Homemakers of Virginia

Occupational Programs

The adult occupational programs in Work and Family Studies are considered to be preparatory in nature. They are designed to provide training for persons who are employed but need training or who need retraining in preparation for a new occupation. Specifically, the programs provide training or retraining in the occupational areas of Work and Family Studies.

Adult education occupational programs in Work and Family Studies may be offered in the following areas:

Cake Decorating
Catering
Child Care
Clothing Alterations
Clothing Construction
Dietary Aide
Fashion Design
Food Service
Home and Institutional Services
Home Furnishings
Quantity Food Cookery
Tailoring
Upholstery
Other Related Areas With Approval

Student Organizations: Future Homemakers of America Home Economics-Related Occupations

Future Homemakers of America, Inc. is a national vocational student organization. The Virginia Association of Future Homemakers of America, Inc., is the state affiliate of this national organization. Schools and Work and Family Studies classes shall form local chapters that affiliate with the state and national organizations. Local FHA, HERO, or FHA/HERO chapters associated with a school's Work and Family Studies program support opportunities for students to initate and carry out individual chapter projects.

A goal and specific purposes provide direction for the organization at all levels.

Goal:

To help youth assume their roles in society through Work and Family Studies education in areas of personal growth, family life, vocational preparation, and community involvement.

Purposes:

- To provide opportunities for self-development and preparation for family and community living and for employment
- To strengthen the function of the family as the basic unit of society
- To encourage democracy through cooperative action in the home and community
- To encourage individual and group involvement in helping achieve worldwide brotherhood
- To institute programs promoting greater understanding between youth and adults
- To provide opportunities for decision-making and for assuming responsibility
- To develop interest in Work and Family Studies, Work and Family Studies careers, and related occupations.

Opportunities to use the community as a resource and to participate in local, state, national, and international activities can help students attain a wholeness of perspective. These varied opportunities also help students learn new methods of forming partnerships and working together that can be applied to working with peers and with teachers.

Membership in Future Homemakers of America, Inc. is open to all students who are enrolled in or have taken a course in Work and Family Studies. FHA chapters emphasize preparation for community and family life, while recognizing that family members fill dual roles as wage earners. HERO chapters emphasize preparation for jobs and careers in Work and Family Studies-related occupations, recognizing that wage earners fill multiple roles as family members.

FHA/HERO may be incorporated into the program through an in-class or out-of-class chapter with one or more advisers per school. This type of chapter would include students who are enrolled in or have taken courses in occupational and/or consumer and homemaking education.

Substitution for High School Science, Mathematics, and Fine Arts

Students successfully meeting the requirements of the program offferings beyond the introductory level may substitute it for one unit of science, mathematics, and/or fine arts, whichever is the most applicable, in the 21-unit diploma system, if approved locally. The options are outlined as follows:

Consumer and Homemaking Program

- Life Management Skills I (Grades 8 or 9-12) and Life Management Skills II (Grades 9-12)
- Life Management Skills I (Grades 8 or 9-12) and Family Management Skills (Grades 10-12)
- Life Management Skills I (Grades 8 or 9-12) and two semester courses as defined by this Service (Grades 9-12)
- Life Management Skills II (Grades 9-12) and Family Management Skills (Grades 10-12)
- Life Management Skills II (Grades 9-12) and two semester courses as defined by this Service (Grades 9-12)
- Family Management Skills (Grades 10-12) and two semester courses as defined by this Service (Grades 9-12)
- Four semester courses (in three or more content areas, Grades 9-12) as defined by this Service
- GRADS (Grades 7-12) and individually prescribed courses (Grades 8-12) based on students' needs.

Occupational Work and Family Studies Program

- Child Care Occupations I
- Child Care Occupations II
- Clothing Occupations I
- Clothing Occupations II
- Food Occupations I
- Food Occupations II

- Home Furnishings Occupations I
- Home Furnishings Occupations II

- Home and Institutional Services I
- Home and Institutional Services II
- Home Health Aide (see Health Occupations Education)

- Home Economics Cooperative Education I (HECE)
- Home Economics Cooperative Education II (HECE)

- Catering Specialist

- Clothing Specialist

- Home Health Aide Specialist

- Hotel/Motel Specialist

- Occupational Home Economics for the Disabled

- Occupational Home Economics for the Disadvantaged

- Occupational Home Economics Internship

Students who complete a Work and Family Studies program may substitute it for a practical arts elective, if approved locally.

Carnegie Units for Graduation for the Eighth-Grade Student

The Standards and Regulations for Public Schools in Virginia, effective July 1, 1992, provide for alternate math or science credit in consumer and homemaking education, grades 8 through 12 and practical arts credit, grades 8 through 12, if locally approved.

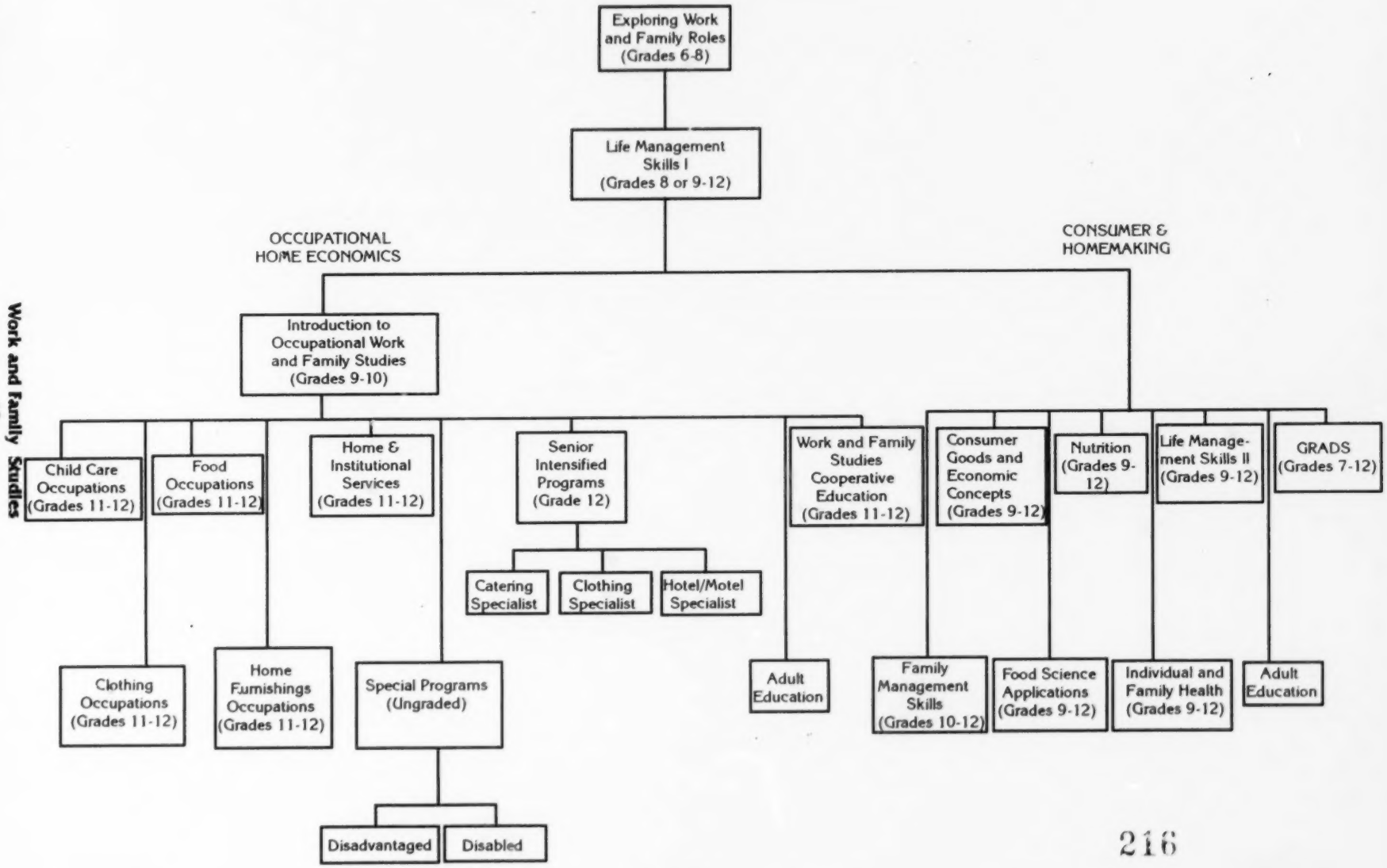
In the accreditation standards, Part VII, page 26, E reads:

> "When students below the ninth grade successfully complete courses offered for credit in grades 9 through 12, credit shall be counted toward meeting the units required for graduation."

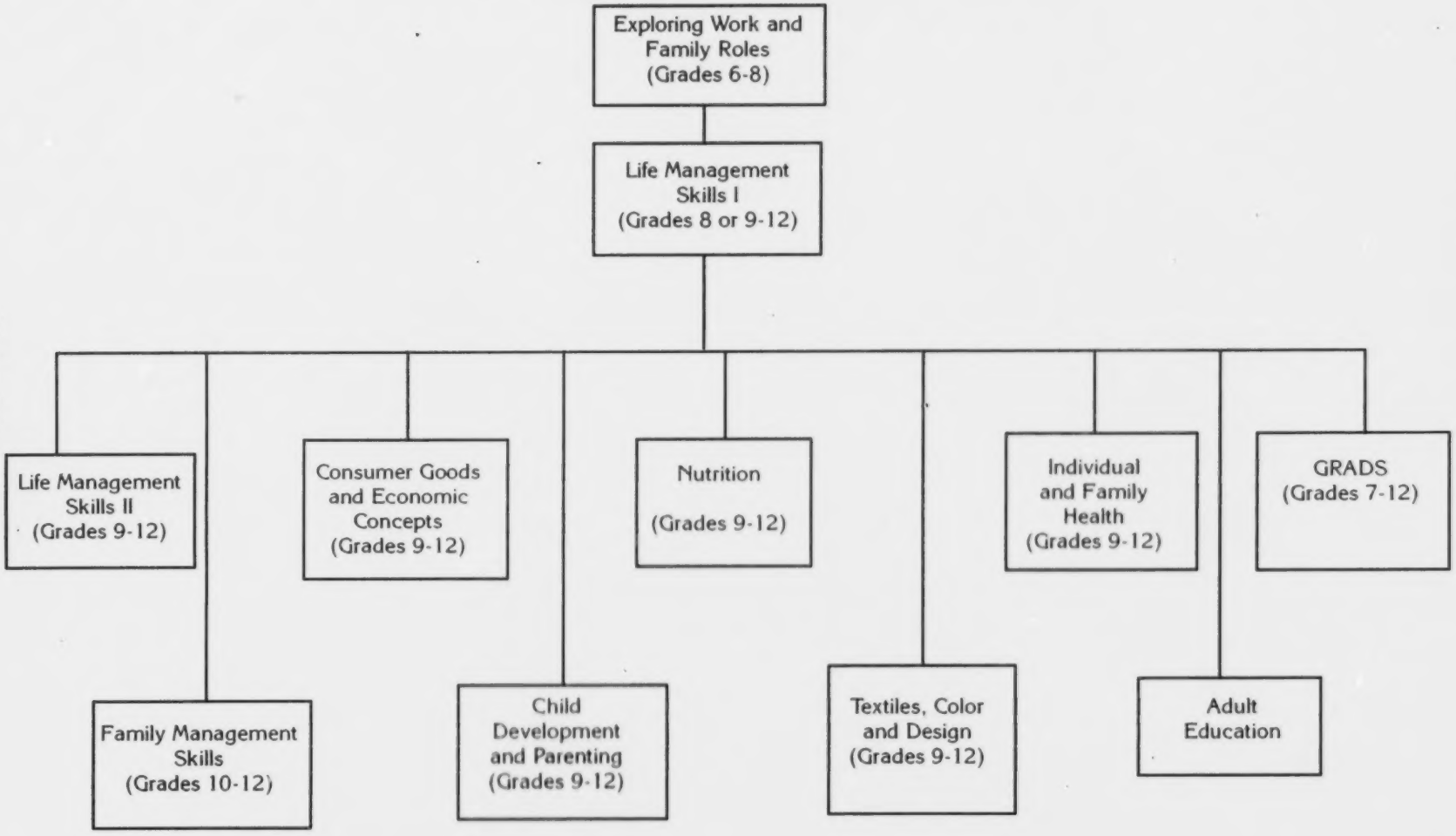
Life Management Skills I (8230) and GRADS (8277/8277) are the only high school courses officially designated as courses available for an eighth grader to take, if locally approved.

There is one exception to the above. It would be acceptable for a second-semester GRADS student to enroll in semester courses that would support the student's role as a better parent, e.g., Child Development and Parenting, Marriage and the Family, Nutrition, and Personal Consumer Decisions.

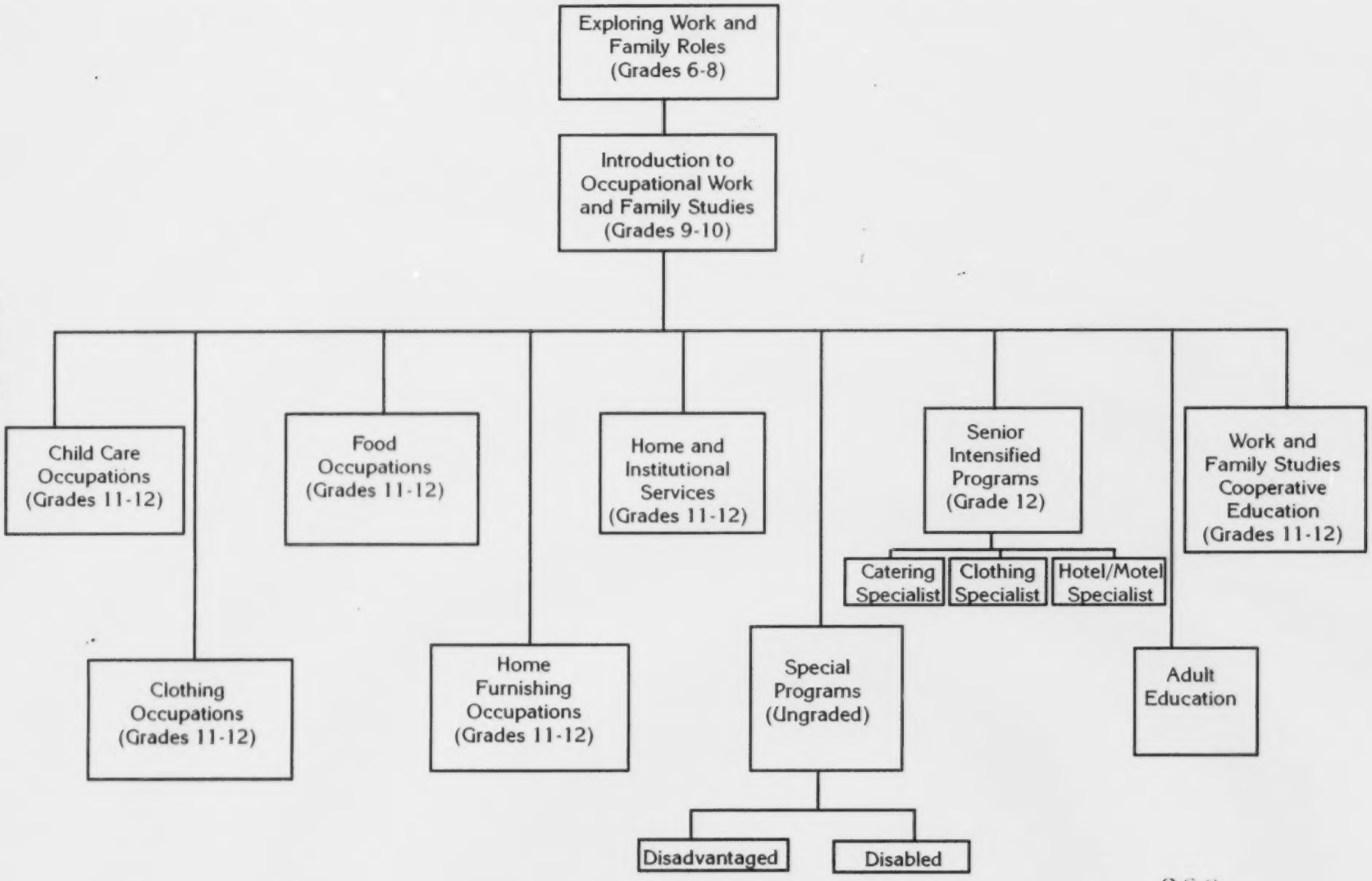
Work and Family Studies
Recommended Program Sequence


Exploring Work and Family Roles (Grades 6-8)
Life Management Skills I (Grades 8 or 9-12)
OCCUPATIONAL HOME ECONOMICS
CONSUMER & HOMEMAKING
Introduction to Occupational Work and Family Studies (Grades 9-10)
Child Care Occupations (Grades 11-12)
Food Occupations (Grades 11-12)
Home & Institutional Services (Grades 11-12)
Senior Intensified Programs (Grade 12)
Work and Family Studies Cooperative Education (Grades 11-12)
Consumer Goods and Economic Concepts (Grades 9-12)
Nutrition (Grades 9-12)
Life Management Skills II (Grades 9-12)
GRADS (Grades 7-12)
Catering Specialist
Clothing Specialist
Hotel/Motel Specialist
Clothing Occupations (Grades 11-12)
Home Furnishings Occupations (Grades 11-12)
Special Programs (Ungraded)
Adult Education
Family Management Skills (Grades 10-12)
Food Science Applications (Grades 9-12)
Individual and Family Health (Grades 9-12)
Adult Education
Disadvantaged
Disabled

Consumer & Homemaking Education
Recommended Program Sequence


Exploring Work and Family Roles (Grades 6-8)
Life Management Skills I (Grades 8 or 9-12)
Life Management Skills II (Grades 9-12)
Family Management Skills (Grades 10-12)
Consumer Goods and Economic Concepts (Grades 9-12)
Child Development and Parenting (Grades 9-12)
Nutrition (Grades 9-12)
Textiles, Color and Design (Grades 9-12)
Individual and Family Health (Grades 9-12)
Adult Education
GRADS (Grades 7-12)

Occupational Programs
Recommended Program Sequence


Exploring Work and Family Roles (Grades 6-8)
Introduction to Occupational Work and Family Studies (Grades 9-10)
Child Care Occupations (Grades 11-12)
Clothing Occupations (Grades 11-12)
Food Occupations (Grades 11-12)
Home Furnishing Occupations (Grades 11-12)
Home and Institutional Services (Grades 11-12)
Special Programs (Ungraded)
Disadvantaged
Disabled
Senior Intensified Programs (Grade 12)
Catering Specialist
Clothing Specialist
Hotel/Motel Specialist
Work and Family Studies Cooperative Education (Grades 11-12)
Adult Education

Work and Family Studies Programs and Courses
Consumer and Homemaking

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Orientation and Exploration				
Exploratory - Grade 6	8204*	6		
Exploratory - Grade 7	8206*	7		
Exploratory - Grade 8	8208*	8		
Exploratory - 6 weeks	8241**	6-8	6	
Exploratory - 9 weeks	8242**	6-8	9	
Exploratory - 12 weeks	8243**	6-8	12	
Exploratory - 18 weeks	8244**	6-8	18	
Exploratory - 36 weeks	8245**	6-8	36	
Thematic Units	8246**	6-8		
GRADS	8211/ 8212	6-8	18/36	15
Fundamental Courses				
Life Management Skills I	8230	8 or 9-12	36	20
Life Management Skills II	8240	9-12	36	20
Family Management Skills	8270	10-12	36	
Child Care Services* **				
Life Management Skills I	8230[1]	8 or 9-12	36	20
or				
Life Management Skills II	8240[1]	9-12	36	20
or				
Family Management Skills	8270[1]	10-12	36	
and				
Individual and Family Health	8269	9-12	18	
Marriage and the Family	8272	9-12	18	
Child Development for the Gifted	8283	10-12		
Child Development and Parenting	8284	9-12	18	
GRADS	8277/ 8278	9-12	18/36	15
Consumer and Homemaking Education Internship	8217/ 8218[1]	10-12	18/36	20
Consumer Services * **				
Life Management Skills I	8230[1]	8 or 9-12	36	20
or				
Life Management Skills II	8240[1]	9-12	36	20
or				
Family Management Skills	8270[1]	10-12	36	
and				
Consumer Goods and Economic Concepts	8252	9-12	18	
Personal Consumer Decisions	8253	9-12	18	
Consumer and Homemaking Education Internship	8217/ 8218[1]	10-12	18/36	20

*Use when enrollment is restricted by grade.
**Use when enrollment is restricted by weeks.
***Approved completer program
[1]Recommended as part of Work and Family Studies program, but optional for program completion.
Note: When a maximum class size is not identified, the school division is responsible for determining class size based on classroom safety and number of work stations available.

Work and Family Studies Programs and Courses
Consumer and Homemaking

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
GRADS Program* **				
GRADS	8211/ 8212	6-8	18/36	15
GRADS	8277/ 8278	9-12	18/36	15
Life Management Skills I	8230	8 or 9-12	36	20
Child Development for the Gifted	8283	10-12		
Child Development and Parenting	8284	9-12	18	
Individual and Family Health	8269	9-12	18	
Nutrition	8262	9-12	18	
Marriage and the Family	8272	9-12	18	
Occupational Work and Family Studies	(See occupational section)			
Consumer and Homemaking Education Internship	8217/ 8218	10-12	18/36	20
Housing, Furnishings, and Equipment Management* **				
Life Management Skills I	8230[1]	8 or 9-12	36	20
or				
Life Management Skills II	8240[1]	9-12	36	20
or				
Family Management Skills	8270[1]	10-12	36	
and				
Consumer Goods and Economic Concepts	8252	9-12	18	
Personal Consumer Decisions	8253	9-12	18	
Resource Management	8271	9-12	18	
Textile, Color and Design	8267	9-12	18	
Home Furnishings and Housing	8297	9-12	18	
Consumer and Homemaking Education Internship	8217/ 8218[1]	10-12	18/36	20
Individual and Family Health Services* **				
Life Management Skills I	8230[1]	8 or 9-12	36	20
or				
Life Management Skills II	8240[1]	9-12	36	20
or				
Family Management Skills	8270[1]	10-12	36	
and				
Nutrition	8262	9-12	18	
Nutrition for the Gifted	8261	10-12	36	
Individual and Family Health	8269	9-12	18	
Personal Consumer Decisions	8253	9-12	18	
Home Care of the Sick and Aging	8268	9-12	18	
Consumer and Homemaking Education Internship	8217/ 8218[1]	10-12	18/36	20

***Approved completer program
[1] Recommended as part of Work and Family Studies program, but optional for program completion
Note: When a maximum class size is not identified, the school division is responsible for determining class size based on classroom safety and number of work stations available.

Work and Family Studies Programs and Courses
Consumer and Homemaking

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Nutrition and Food Production* **				
Life Management Skills I	8230[1]	8 or 9-12	36	20
or				
Life Management Skills II	8240[1]	9-12	36	20
or				
Family Management Skills	8270[1]	10-12	36	
and				
Nutrition	8262	9-12	18	
Nutrition for the Gifted	8261	10-12	36	
Food Science Applications	8263	9-12	18	
Food Management	8273	9-12	18	20
Consumer and Homemaking Education Internship	8217/ 8218[1]	10-12	18/36	20
Residential Home Manager ***				
Life Management Skills I	8230[1]	8 or 9-12	36	20
or				
Life Management Skills II	8240[1]	9-12	36	20
or				
Family Management Skills	8270[1]	10-12	36	
and				
Consumer Goods and Economic Concepts	8252	9-12	18	
Personal Consumer Decisions	8253	9-12	18	
Home Science Applications	8257	9-12	18	
Resource Management	8271	9-12	18	
Individual and Family Health	8269	9-12	18	
Marriage and the Family	8272	9-12	18	
Child Development and Parenting	8284	9-12	18	
Consumer and Homemaking Education Internship	8217/ 8218[1]	10-12	18	
		10-12	18/36	20
Textiles and Fashion Production* **				
Life Management Skills I	8230[1]	8 or 9-12	36	20
or				
Life Management Skills II	8240[1]	9-12	36	20
or				
Family Management Skills	8270[1]	10-12	36	
and				
Textile Color and Design	8267	9-12	18	
Clothing Management	8274	9-12	18	
Consumer and Homemaking Education Internship	8217/ 8218[1]	10-12	18/36	20

***Approved completer program
[1] Recommended as part of Work and Family Studies program, but optional for program completion
Note: When a maximum class size is not identified, the school division is responsible for determining class size based on classroom safety and number of work stations available.

Work and Family Studies Programs and Courses
Occupational

Programs and Courses	Course Code	Suggested Grade Level	No. of Weeks	Maximum Class Size
Orientation and Exploration				
Exploratory—Grade 6	8204*	6		
Exploratory—Grade 7	8206*	7		
Exploratory—Grade 8	8208*	8		
Exploratory—6 weeks	8241**	6-8	6	
Exploratory—9 weeks	8242**	6-8	9	
Exploratory—12 weeks	8243**	6-8	12	
Exploratory—18 weeks	8244**	6-8	18	
Exploratory—36 weeks	8245**	6-8	36	
Thematic Units	8246**	6-8		
GRADS	8211/ 8212	6-8	18/36	15
Occupational Work and Family Studies***				
Introduction to Occupational Work and Family Studies	8220/ 8221[1]	9-10	18/36	20
Child Care Occupations I	8285	11	36	20
Child Care Occupations II	8286	12	36	20
Clothing Occupations I	8280	11	36	20
Clothing Occupations II	8281	12	36	20
Food Occupations I	8275	11	36	20
Food Occupations II	8276	12	36	20
Home Furnishings Occupations I	8295	11	36	20
Home Furnishings Occupations II	8296	12	36	20
Home and Institutional Services I	8290	11	36	20
Home and Institutional Services II	8291	12	36	20
Home Health Aide **** (see also Health Occupations Education)	8298	11	36	20
Work and Family Studies Cooperative Ed. I	8293	11	36	20
Work and Family Studies Cooperative Ed. II	8294	12	36	20
Occupational Work and Family Studies Internship (not an option for Work and Family Studies Cooperative Education I and II)	8215/ 8216[1]	10-12	18/36	20
Special Programs* **				
GRADS (occupational)	8213	10-12	36	15
Occupational Work and Family Studies—Disabled	8222	Ungraded	36	10
Occupational Work and Family Studies—Disadvantaged	8224	Ungraded	36	15
Senior Intensified				
Catering Specialist	8279	12	36	20
Clothing Specialist	8289	12	36	20
Hotel/Motel Specialist	8292	12	36	20

*Use when enrollment is restricted by grade.
**Use when enrollment is restricted by weeks.
***Approved completer program
****Vocxational program mix
[1]Recommended as part of Work and Family Studies program, but optional for program completion.
Note: When a maximum class size is not identified, the school division is responsible for determining class size based on classroom safety and number of work stations available.

WORK AND FAMILY STUDIES

NOTE

The course information on the following pages is unchanged from the 1994 edition. Work and Family Studies (formerly Home Economics Education) programs and courses are presently being restructured. Information on new and revised offerings will be distributed by November 1, 1994, and these pages should be inserted in place of the Work and Family Studies pages.

Middle-Level Program
Exploring Work and Family Roles

Description: The middle-level education exploratory program provides a foundation for management of personal, family, work, and community roles and responsibilities. Students explore concepts and practice skills related to problem-solving, leadership, interpersonal relationships, ethical practices, career interests, environmental issues, and high quality work. Mathematics, science, language, social sciences, fine arts, and technology are integrated throughout the program. **Exploring Work and Family Roles** is the foundation for Work and Family Studies programs on the high school level.

CIP Code: 20.0105

Approved Courses:	**Prerequisites:**
Exploratory—36 weeks (8245)	None
Exploratory—18 weeks (8244)	None
Exploratory—12 weeks (8243)	None
Exploratory—9 weeks (8242)	None
Exploratory—6 weeks (8241)	None
Thematic Unit(s) (8246)	

Note: The local education agency has the option of designating specific titles for exploratory courses and thematic units.

When enrollment is restricted by grade, use the following codes:
Grade 8—8208
Grade 7—8206
Grade 6—8204.

Suggested Grade Levels: Students 9-13 years old (grades 4, 5, 6, 7, 8)

Exploratory

See program description for grade levels and course codes.

The course focuses on processes students must master in order to manage their responsibilities at home, at school, and in the community. Instructional strategies are interactive, relevant, and practical according to students' needs, age, and the length of time assigned to the course. Students apply knowledge and skills learned through the development of projects and products.

GRADS 8211/8212

Grade Level: 6-8 (18/36 weeks) Prerequisite: None

The **G**raduation, **R**eality, **A**nd **D**ual-role **S**kills Program (GRADS) is a Work and Family Studies in-school program for pregnant students and young parents in comprehensive middle/junior high school, senior high schools, and vocational schools. This program should be individualized to meet the needs of each student, with emphasis on staying in school until graduation, literacy, basic skills, individual and family health, parenting skills, general employability skills, and possibly job training skills.

Consumer and Homemaking

Description: The objective of consumer and homemaking education is to prepare individuals for the occupation of being a home manager with particular emphasis on consumer education for personal and family use. Other major areas provide instruction in the individual development of all family members; skill development in the areas of foods, clothing, housing, and home management; and preparation for marriage and parenthood. Life Management Skills I forms the basis for enrollment in specialized areas and is recommended for enrollment in an occupational program. All courses meet five days a week or the equivalent thereof. Extended learning experiences beyond the classroom are encouraged and are supervised by the Work and Family Studies teacher. (See the complete list of consumer and homemaking programs on page 15-17).

CIP Code: 20.0101

Suggested Grade Level: 8, 9, 10, 11, 12

Prerequisites: None

Approved Courses:

Child Development and Parenting (8284)
Child Development for the Gifted (8261)
Clothing Management (8274)
Consumer Goods and Economic Concepts (8252)
Consumer and Homemaking Education Internship (8217/8218)
Family Management Skills (8270)
Food Management (8273)
Food Science Applications (8263)
GRADS (8277/8278)
Home Care of the Sick and Aging (8268)
Home Furnishings and Housing (8297)
Home Science Application (8257)
Individual and Family Health (8269)
Life Management Skills I (8230)
Life Management Skills II (8240)
Marriage and the Family (8272)
Nutrition (8262)
Nutrition for the Gifted (8261)
Personal Consumer Decisions (8253)
Resource Management (8271)
Textile, Color and Design (8267)
Internship (8217/8218)

Related Postsecondary Programs:

Child Development, Care, and Guidance
Clothing, Textiles, and Merchandising
Consumer Information
Cooperative Extension Service
Education
Family Life and Human Services
Home Economics Related Communications and Journalism
Housing, Home Furnishings, and Equipment

Child Development and Parenting 8284

Grade Level: 9-12 (18 weeks) Prerequisites: None

Aspects of growth and development of children are studied in this single-period course. Practical experiences in a day care center or observation of child behavior is provided as an essential part of the course. Emphasis is given to parental responsibility, community, resources, and environment.

Clothing Management 8274

Grade Level: 9-12 (18 weeks) Prerequisites: None

Students study the management of clothing for the individual and family. Emphasis is given to purchasing practices, wardrobe planning and coordination, and proper care and storage of clothing and accessories. Garment construction may be included in this single-period course.

Consumer and Homemaking Internship 8217

Grade Level: 10-12 (18 weeks) Prerequisites: None

A C&HE internship is a program option for students wanting on-the-job, unpaid training in one or more specific subject matter content areas. The student combines a single period of daily classrrom instruction or the equivalent thereof with two to three hours of school release time per day for on-the-job training experience in business and industry. An 18-week, 1/2-credit internship requires 200 hours of on-the-job training.

Consumer and Homemaking Internship 8218

Grade Level: 10-12 (36 weeks) Prerequisites: None

A C&HE internship is a program option for students wanting on-the-job, unpaid training in one or more specific subject matter content areas. The student combines a single period of daily classrrom instruction or the equivalent thereof with two to three hours of school release time per day for on-the-job training experience in business and industry. A 36-week, 1-credit internship requires 405 hours of on-the-job training.

Consumer Goods and Economic Concepts 8252

Grade Level: 9-12 Prerequisites: None

This one-period course provides an in-depth study of the management of the consumer dollar and other resources and skills necessary for personal and home management. Basic economic concepts and the free enterprise system are examined as they apply to personal and family living.

Family Management Skills 8270

Grade Level: 10-12 (suggested) (36 weeks) Prerequisites: None

Family Management Skills is designed to provide basic consumer and homemaking instruction to students in the 10th, 11th, or 12th grade who have had no previous high school course in preparation for the occupation of homemaking (although the student may have had Teen Living or Life Management Skills I in the middle/junior high school). In this single-period, one-year course, students learn fundamental homemaking skills, coping skills, and life management skills; they study developing and implementing individual and family interactions; planning and implementing nutritionally adequate diets; analyzing and selecting consumer alternatives; and managing resources. Computer skills that can enhance Family Management Skills may be included.

Food Management 8273

Grade Level: 9-12 (18 weeks) Prerequisites: None

The management of time, energy, and money to provide adequate food for the individual and the family is studied. Emphasis is placed on skill development in planning, purchasing, preparing, and serving nutritious, tasty, and attractive meals. Included in this single-period course is a study of methods of food conservation and the selection, use, and care of kitchen equipment.

Food Science Applications 8263

Grade Level: 9-12 (18 weeks) Prerequisites: None

In this one-period course students are provided an in-depth study of foods, including laboratory experiences in food science. Laboratory experiences emphasize food science in handling and processing foods, food additives, microbial growth, enzyme activity, and other chemical reactions.

GRADS 8277/8278

Grade Level: 7-12 (18/36 weeks) Prerequisites: None

The Graduation, Reality, and Dual-role Skills Program (GRADS) is a Work and Family Studies in-school program for pregnant students and/or young parents in comprehensive middle/junior high schools, senior high schools, and vocational schools. This program should be individualized to meet the needs of each student with emphasis on staying in

school until graduation, literacy, basic skills, individual and family health, parenting skills, general employability skills, and possibly job training skills.

Home Care of the Sick and Aging 8268

Grade Level: 9-12 (18 weeks) Prerequisites: None

In this single-period course, students study managing the home for personal and family wellness, identifying signs of illness, handling illnesses, managing emergencies and crisis situations, and providing home care for the ill and the elderly.

Home Science Applications 8257

Grade Level: 9-12 (18 weeks) Prerequisites: None

Students study the scientific characteristics of base materials used in households, and basic facts on the use of electricity, gas, and electronics in the home. Laboratory experiences include identifying and evaluating scientific applications related to water conditioning, detergents, and other cleaning and washing aids, and safety precautions essential for their use.

Individual and Family Health 8269

Grade Level: 9-12 (18 weeks) Prerequisites: None

The perspective of health as it relates to avoiding illness, understanding nutrition, and making family health decisions is the focus of this course. Instructional areas also include personal and family safety, community health, and public health. Careers related to public health are explored.

Life Management Skills I 8230

Grade Level: 8-11 (suggested) (36 weeks) Prerequisites: None

Life Management Skills I is a single-period, one-year elective course. Units are taught based on individual interests, needs, and concerns of students. In this first year of a sequentially designed program, emphasis is placed on studying consumer resources, privileges, and responsibilities; using, caring for, and arranging small and large household equipment for greater efficiency; studying nutrition; planning, preparing, and serving simple meals; constructing a simple garment; using management procedures; and being a contributing family member.

Life Management Skills II 8240

Grade Level: 9-12 (suggested) (36 weeks) Prerequisites: None

Life Management Skills II is a single-period, one-year elective course that expands upon the knowledge and skills acquired in Life Management Skills I. Content emphasis includes basic money management concepts; space management and work simplification; meal planning and preparation for the family; advanced clothing

construction; and responsibilities of families. (If a student has no previous Work and Family Studies classes, the teacher should individualize the curriculum to meet the needs of the student.)

Marriage and the Family 8272

Grade Level: 9-12 (18 weeks) Prerequisites: None

Students are provided an in-depth study of strengthening appreciation of the family unit; developing personal and family relationships; determining decision-making responsibilities; sharing goals, values, and standards; analyzing family problem-solving activities; and evaluating the importance of communication. Responsible parenthood and emphasis on the dignity and worth of the individual are components of this single-period course.

Nutrition 8262

Grade Level: 9-12 (18 weeks) Prerequisites: None

An in-depth study of nutrients, nutritional needs and issues; meal planning and preparation to meet individual needs; food fads and fallacies; safety and sanitation practices in food management; and career opportunities in foods and nutrition is provided. The microcomputer may be used in analyzing nutrient content, planning for special diet needs, and inventories.

Personal Consumer Decisions 8253

Grade Level: 9-12 (18 weeks) Prerequisites: None

This single-period course offers an in-depth study of financial planning, credit, charge accounts, insurance, and consumer decisions. Emphasis is placed on developing skills for planning personal and family financial security.

Resource Management 8271

Grade Level: 9-12 (18 weeks) Prerequisites: None

Human and nonhuman resources available for use in accomplishing personal and family goals are studied in this one-period course. Human capital, goal achievement, and conservation of all resources are emphasized.

Textiles, Color and Design 8267

Grade Level: 9-12 (18 weeks) Prerequisites: None

The study of fibers, yarns, and fabrics comprises this single-period course. Emphasis is on fabric construction, finishes, dyes, and prints; color schemes and guidelines for using color; and principles of design. Students research jobs and careers related to the clothing and textile industry, including entrepreneurship.

Occupational Work and Family Studies

Description: The objectives of the occupational Work and Family Studies program are to prepare individuals, including the disabled and disadvantaged, for employment in jobs requiring Work and Family Studies knowledge and skills and to develop personal employability and employment-seeking skills. Completion of one or two years of consumer and homemaking courses or the course Introduction to Occupational Work and Family Studies is recommended for students entering the occupational Work and Family Studies program. Occupational programs are two years in length and should begin in the eleventh grade. Classes meet daily during a one*-, two-, or three-hour block.

CIP Code:

20.0100	Introduction to Occupational Work and Family Studies
20.0201	Child Care Occupations
20.0301	Clothing Occupations
20.0401	Food Occupations
20.0501	Home Furnishings
20.0601	Home and Institutional Services

Prerequisites: None--Introduction to Occupational Work and Family Studies or Life Management Skills is strongly recommended.

Approved Courses:

Introduction to Occupational Work and Family Studies (8220/8221)
Child Care Occupations I (8285)
Child Care Occupations II (8286)
Clothing Occupations I (8280)
Clothing Occupations II (8281)
Food Occupations I (8275)
Food Occupations II (8276)
Home Furnishings Occupations I (8295)
Home Furnishings Occupations II (8296)
Home and Institutional Services I (8290)
Home and Institutional Services II (8291)
Home Health Aide (8298)
Occupational Home Economics Internship (8215/8216)
Work and Family Studies Cooperative Education I (8293)
Work and Family Studies Cooperative Education II (8294)

***A one-hour block of classroom meeting time applies only to the occupational program, Work and Family Studies Cooperative Education. No other occupational programs are approved for a one-hour block of classroom meeting time, including senior intensified courses.**

Introduction to Occupational Work and Family Studies 8220

Grade Level: 9 or 10 (suggested) (18 weeks) Prerequisites: None

This course introduces students to a variety of work experiences and to a variety of jobs in which knowledge and skills related to work and family roles are fundamental.

Introduction to Occupational Work and Family Studies 8221

Grade Level: 9 or 10 (suggested) (36 weeks) Prerequisites: None

This course introduces students to a variety of work experiences and jobs. It affords first-hand opportunities in work situations and enables students to begin to equate their interests and abilities with possible career objectives in a specific occupational area. Emphasis also is placed on the development of personal qualities and job-seeking skills for employment.

Child Care Occupations I 8285

Grade Level: 11 (suggested) (36 weeks) Prerequisites: Introduction to Occupational Work and Family Studies recommended.

Child Care Occupations I is designed to assist students in developing the skill and understanding needed in working with small children. Emphasis also is placed on the development of personal qualities and job-seeking skills for employment.

Child Care Occupations II 8286

Grade Level: 12 (suggested) (36 weeks) Prerequisites: Child Care Occupations I

Child Care Occupations II is an in-depth extension of Child Care Occupations I. This course emphasizes occupational skills for workers in child care centers, workers serving as foster parents, child care attendants, kindergarten aides, or child care assistants. Cooperative (on-the-job) education under the supervision of the instructor is an option. A training agreement and plan for each student must be filed in the Work and Family Studies department. The training agreement and plan should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and student.

Clothing Occupations I 8280

Grade Level: 11 (suggested) (36 weeks)

Prerequisites: Introduction to Occupational Work and Family Studies is recommended.

Clothing Occupations I is designed to introduce skills for entry-level jobs in clothing occupations. Students are prepared for semi-skilled and skilled jobs in clothing such as alterationist, custom sewer, factory worker (assembly line), stitcher, and sewer. Emphasis is also placed on the development of personal qualities and job-seeking skills for employment.

Clothing Occupations II 8281

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: Clothing Occupations I

Clothing Occupations II is designed to build upon and refine the skills developed in Clothing Occupations I. Students are prepared for skilled occupations such as custom dressmaker, custom tailor, assembly line supervisor, or wardrobe consultant and entrepreneur. Cooperative (on-the-job) education in factories, clothing industries, and other such establishments is an option. A training agreement and plan for each student must be filed in the Work and Family Studies department. The training agreement and plan should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and the student.

Food Occupations I 8275

Grade Level: 11 (suggested) (36 weeks)

Prerequisites: Introduction to Occupational Work and Family Studies is recommended.

Food Occupations I prepares students for employment as waiter-waitress, dining room attendant-bus person, counter attendant, caterer helper, and hospital dietary aide. Emphasis is placed on the development of personal qualities and job-seeking skills for employment.

Food Occupations II 8276

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: Food Occupations I

Food Occupations II is designed to provide in-depth instruction in food preparation, development of personal qualities for job success, and employment opportunities in the food industry. Students acquire competencies necessary for advancement into such skilled areas as line cook, food-service supervisor, cafeteria or lunchroom manager, and entrepreneur. Cooperative (on-the-job) education coordinated by the instructor is an option. A training agreement and plan for each student must be filed in the Work and

Family Studies department. The training agreement and plan should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and the student.

Note: Completion of this program may prepare students for apprenticeships in the food service industry. Contact the Virginia Department of Labor and Industry, Apprenticeship Division for further information.

Home Furnishings Occupations I 8295

Grade Level: 11 (suggested) (36 weeks)

Prerequisites: Introduction to Occupational Work and Family Studies is recommended.

Home Furnishings Occupations I is designed to prepare students for occupations in the planning, selecting, and constructing of slipcovers, draperies, upholstery, and for other jobs in home decoration. Emphasis also is placed on the development of personal qualities and job-seeking skills for employment.

Home Furnishings Occupations II 8296

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: Home Furnishings Occupations I

Home Furnishings Occupations II is designed to enhance skills developed in Home Furnishings Occupations I. Students prepare for employment as interior decorator's assistant, upholster's assistant, or home furnishings sewer. Cooperative (on-the-job) education coordinated by the instructor is an option. A training agreement and plan for each student must be filed in the Work and Family Studies department. The training agreement and plan should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and the student.

Home and Institutional Services I 8290

Grade Level: 11 (suggested) (36 weeks)

Prerequisites: Introduction to Occupational Work and Family Studies is recommended.

Home and Institutional Services I is designed to prepare students as housekeeping aides for motels and hotels, business and professional offices, churches, and schools; institutional and appliance demonstrators; and for related jobs in private homes, nursing homes, or hospitals. This course is designed to help students develop skills in the use and care of furniture, furnishings, cleaning appliances, equipment, and supplies; gain an understanding of the procedures for cleaning and straightening a room; and learn basic safety practices. Emphasis also is placed on the development of personal qualities and job-seeking skills for employment.

Home and Institutional Services II 8291

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: Home and Institutional Services I

Home and Institutional Services II is designed for advanced skill development. Students prepare for employment in homes or as institutional or executive housekeepers, management assistants, inspectors, and entrepreneurs. Cooperative (on-the-job) education coordinated by the instructor is an option. A training agreement and plan for each student is filed in the Work and Family Studies department. The training agreement and plan should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and the student.

Home Health Aide 8298

Grade Level: 12 (suggested) (36 weeks)

Prerequisites: Health Assistant I* Home and Institutional Services I or Home Care of the Sick and Aging **and** Individual and Family Health

Home Health Aide (Health Assistant II), a triple-period occupational preparation course, offers advanced skill development for students who wish to pursue entry-level employment caring for ill or disabled clients in the client's home. Course content includes both health care and home management tasks, building on the basic competencies that comprise the prerequisites. Areas of instruction include the concepts associated with aging and interpersonal relations, personal care, home management and maintenance, home safety, meal preparation, and care of the terminally ill.

*Vocational program mix with Health Occupations Education

Occupational Internship 8215

Grade Level: 10-12 (18 weeks)

Prerequisites: None

An internship is a program option for students wanting on-the-job, unpaid training in one or more specific subject matter content areas. The student combines daily classroom instruction or the equivalent thereof with two to three hours of school release time per day for on-the-job training experience in business and industry. An 18-week, 1/2-credit internship requires 200 hours of on-the-job training.

Occupational Internship 8216

Grade Level: 10-12 (36 weeks)

Prerequisites: None

An internship is a program option for students wanting on-the-job, unpaid training in one or more specific subject matter content areas. The student combines daily classroom instruction or the equivalent thereof with two to three hours of school release time per day for on-the-job training experience in business and industry. A 36-week, 1-credit internship requires 405 hours of on-the-job training.

Work and Family Studies Cooperative Education I 8293

Grade Level: 11 (36 weeks) Prerequisites: None

WFSCE I is a cooperative work experience program that combines a single period of daily classroom instruction with two or three hours of school release time for students to experience on-the-job training in business and industry. A two-credit course requires 405 hours of cooperative work experience per year, and the three-credit course requires 540 hours of cooperative work experience per year. The program trains for occupations requiring knowledge and skills in one or more of the following Work and Family Studies programs: child care and guidance management and services; clothing, apparel, and textile management, production, and services; food production, management, and services; and institutional, home management, and supporting services.

Work and Family Studies Cooperative Education II 8294

WFSCE II is a cooperative work experience program that combines a single period of daily classroom instruction with two or three hours of school release time per day for students to experience on-the-job training in business and industry. A two-credit course requires 405 hours of cooperative work experience per year; the three-credit course requires 540 hours of cooperative work experience per year. The program trains for occupations requiring knowledge and skills in one or more of the basic Work and Family Studies programs identified above. Cooperative Education I is a prerequisite for Cooperative Education II.

Senior Intensified--
Specialized Occupations

Description: The objective of this program is to prepare individuals for employment in jobs requiring Work and Family Studies skills and knowledge. The program assists in the development of personal employability and employment-seeking skills. Cooperative work programs are implemented in the program whenever possible.

CIP Code:

20.0405	Catering Specialist
20.0306	Clothing Specialist
20.0605	Hotel/Motel Specialist

Suggested Grade Level: 12

Prerequisites: None

Approved Courses:
Catering Specialist (8279)
Clothing Specialist (8289)
Hotel/Motel Specialist (8292)
Occupational Work and Family Studies Internship (8215/8216)

Related Postsecondary Programs:
Hotel-Restaurant-Institution Management
Clothing, Textiles, and Merchandising Management

Catering Specialist 8279

Grade Level: 12 (suggested) (36 weeks) Prerequisites: None

Catering Specialist is a double-period class designed to prepare students in the art of planning, arranging, preparing, and serving food and beverages at a variety of social functions, and in preparing and packaging food products for boxed meals, parties, or other special occasions. Cooperative education (on-the-job training) or simulated experiences are provided during the second semester. A training agreement and plan for each student must be filed in the Work and Family Studies department. The training agreement should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and student.

Note: Completion of this program may prepare students for apprenticeships in the food service industry. Contact the Virginia Department of Labor and Industry, Apprenticeship Division for further information.

Clothing Specialist 8289

Grade Level: 12 (suggested) (36 weeks) Prerequisites: None

Clothing Specialist is a double-period class that includes instruction in wardrobe planning, clothing care, alteration of clothing, selection of clothing and accessories, arranging fashion shows, and rendering consultative services regarding clothing. This course is for students who have artistic and creative ability and possess the ability to work with and cater to individual tastes. Cooperative education (on-the-job training) or simulated experiences are provided during the second semester. A training agreement and plan for each student must be filed in the Work and Family Studies department. The training agreement should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and student.

Hotel/Motel Specialist 8292

Grade Level: 12 (suggested) (36 weeks) Prerequisites: None

Hotel/Motel Specialist is a double-period class that includes instruction in commercial cleaning services, such as the care of resilient floors, carpets, and upholstery in hospitals and hotels or motels. Residential cleaning is also covered in the course. Instruction in kitchen and bathroom care, clothing care, label information, and laundry principles is included. Cooperative education (on-the-job training) or simulated experiences are provided during the second semester. A training agreement and plan for each student must be filed in the Work and Family Studies department. The training agreement should be a cooperative effort by the training sponsor, teacher-coordinator (Work and Family Studies teacher), and student.

Special Programs

Description: These classes are designed for students who require special services and assistance and are approved for certain school divisions where such needs have been identified. This program offers students different approaches to gaining skills needed for employment. It is recommended that guidance counselors and others work very closely with students who enroll in special programs. These programs are offered as a double period for 36 weeks; a double period is required for program completion. **Students must have been properly identified as disadvantaged or disabled to be eligible for the program.**

CIP Code:

20.0299	Child Care Occupations
20.0399	Clothing Occupations
20.0499	Food Occupations
20.0599	Home Furnishings Occupations
20.0699	Home and Institutional Services
20.9900	Production, Management, and Services

Suggested Grade Level: Ungraded

Prerequisites: None

Approved Courses:
GRADS (8213)
Occupational Work and Family Studies Internship (8215/8216)
Occupational Work and Family Studies--Disabled (8222)
Occupational Work and Family Studies--Disadvantaged (8224)

Occupational Work and Family Studies--Disabled 8222

Grade Level: Ungraded (36 weeks)

Occupational Work and Family Studies for the Disabled may be a modified program in the following content areas: Clothing Occupations, Food Occupations, Home Furnishings Occupations and Home and Institutional Services. Another option to the modified program may be a comprehensive plan that includes three or more of the occupational Work and Family Studies areas above; the program would be titled Production, Management, and Services. Students must be properly identified as disabled.

Occupational Work and Family Studies--Disadvantaged 8224

Grade Level: Ungraded (36 weeks)

Occupational Work and Family Studies for the Disadvantaged may be a modified program in the following content areas: Clothing Occupations, Food Occupations, Home Furnishings Occupations, and Home and Institutional Services. Another option to the modified program may be a comprehensive plan that includes three or more of the occupational home economics areas above; the program would be titled Production, Management, and Services. Students must be properly identified as disadvantaged.

Work and Family Studies Education Program Completer Options

Consumer and Homemaking Programs

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
CHILD CARE SERVICES Life Management Skills I (8230) **or** Life Management Skills II (8240) **or** Family Management Skills (8270) **and** Individual and Family Health (8269) Marriage and the Family (8272) Child Development and Parenting (8284) GRADS (8277/8278) C&HE Internship (8217/8218)	Two 36-week courses **or** Four 18-week courses **or** Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses **or** Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program **or** One 36-week course in the related senior intensified course
CONSUMER SERVICES Life Management Skills I (8230) **or** Life Management Skills II (8240) **or** Family Management Skills (8270) **and** Consumer Goods and Economic Concepts (8252) Personal Consumer Decisions (8253) C&HE Internship (8217/8218)	Two 36-week courses **or** Four 18-week courses **or** Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses **or** Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program **or** One 36-week course in the related senior intensified course
GRADS PROGRAM GRADS (8212/8278) Life Management Skills I (8230) Child Development and Parenting (8284) Child Development for the Gifted (8283) Individual and Family Health (8269) Nutrition (8262) Marriage and the Family (8272) Occupational Work and Family Studies (see Occupational Section) C&HE Internship (8217/8218)	Two 36-week courses **or** Four 18-week courses **or** Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses **or** Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program **or** One 36-week course in the related senior intensified course

*An occupational course is defined as a 2-3 hour block for 2-3 Carnegie units.

Consumer and Homemaking Programs (Cont)

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
HOUSING, FURNISHINGS, AND EQUIPMENT MANAGEMENT Life Management Skills I (8230) or Life Management Skills II (8240) or Family Management Skills (8270) **and** Consumer Goods and Economic Concepts (8252) Personal Consumer Decisions (8253) Resource Management (8271) Textile Color and Design (8267) Home Furnishings and Housing (8297) C&HE Internship (8217/8218)	Two 36-week courses or Four 18-week courses or Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses or Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program or One 36-week course in the <u>related</u> senior intensified course
INDIVIDUAL AND FAMILY HEALTH SERVICES Life Management Skills I (8230) or Life Management Skills II (8240) or Family Management Skills (8270) **and** Nutrition (8262) Nutrition for the Gifted (8261) Individual and Family Health (8269) Personal Consumer Decisions (8253) Home Care of the Sick and Aging (8268) C&HE Internship (8217/8218)	Two 36-week courses or Four 18-week courses or Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses or Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program or One 36-week course in the <u>related</u> senior intensified course
NUTRITION AND FOOD PRODUCTION Life Management Skills I (8230) or Life Management Skills II (8240) or Family Management Skills (8270) **and** Nutrition (8262) Nutrition for the Gifted (8261) Food Science Applications (8263) Food Management (8273) C&HE Internship (8217/8218)	Two 36-week courses or Four 18-week courses or Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses or Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program or One 36-week course in the <u>related</u> senior intensified course

*An occupational course is defined as a 2-3 hour block for 2-3 Carnegie units.

Consumer and Homemaking Programs (Cont)

Programs/Courses (Codes)	Minimum Requirements for Program Completion	Recommended for Vocational Concentration
RESIDENTIAL HOME MANAGER Life Management Skills I (8230) **or** Life Management Skills II (8240) **or** Family Management Skills (8270) **and** Consumer Goods and Economic Concepts (8252) Personal Consumer Decisions (8253) Home Science Applications (8257) Resource Management (8271) Individual and Family Health (8269) Marriage and Family (8272) Child Development and Parenting (8284) C&HE Internship (8217/8218)	Two 36-week courses **or** Four 18-week courses **or** Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses **or** Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program **or** One 36-week course in the related senior intensified course
TEXTILES AND FASHION PRODUCTION Life Management Skills I (8230) **or** Life Management Skills II (8240) **or** Family Management Skills (8270) **and** Textile Color and Design (8267) Clothing Management (8274) C&HE Internship (8217/8218)	Two 36-week courses **or** Four 18-week courses **or** Any equivalent combination as illustrated in the *Program Planning Guide*	Three 36-week C&H courses **or** Six 18-week C&H courses **or** Any equivalent combination as illustrated in the *Program Planning Guide* **and** One 36-week occupational course* of a two-year occupational Work and Family Studies program **or** One 36-week course in the related senior intensified course

*An occupational course is defined as a 2-3 hour block for 2-3 Carnegie units.

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Virginia Vocational Curriculum and Resource Center

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